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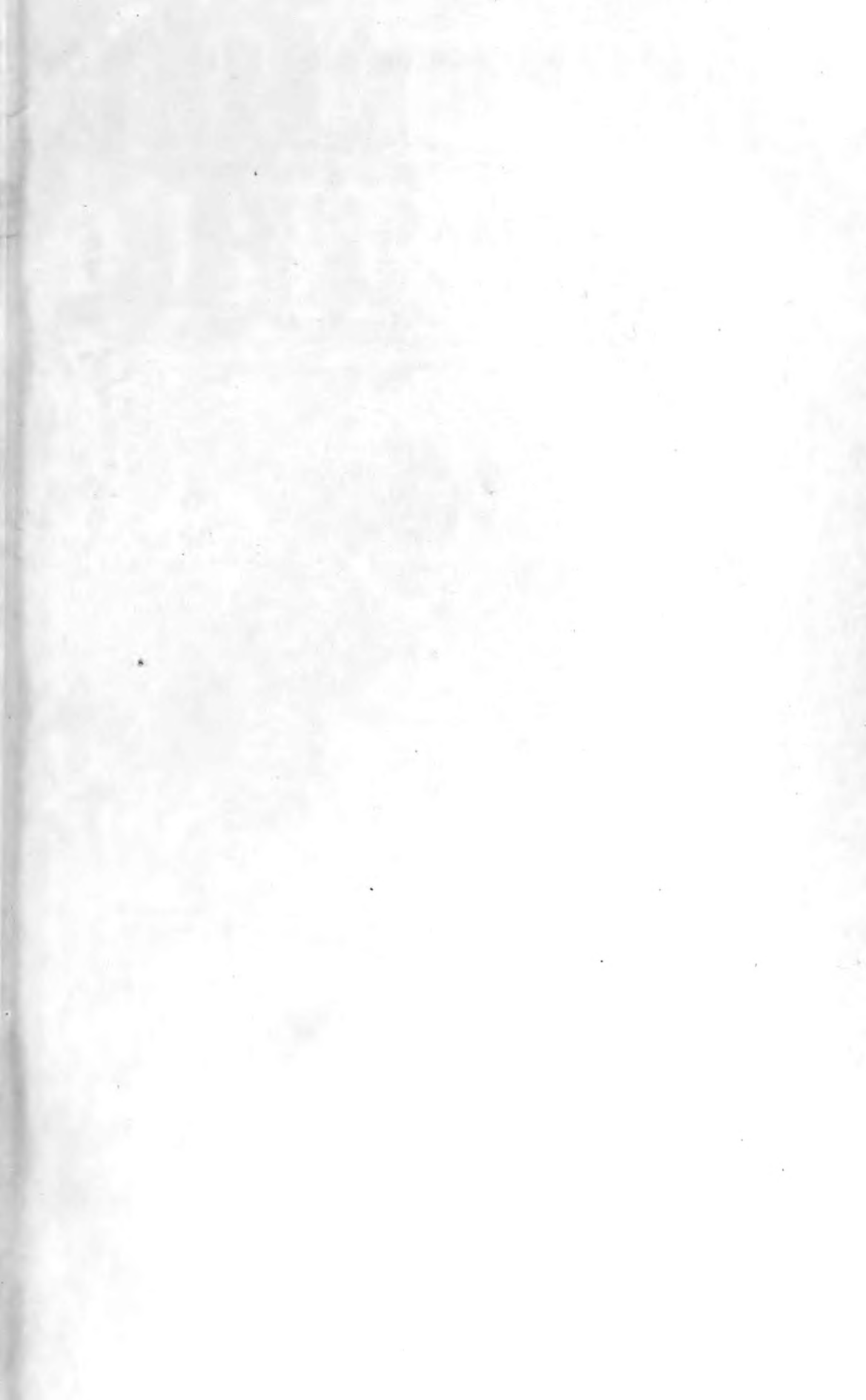
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BRITISH BIRDS



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THREE SHILLINGS

BRITISH BIRDS

AN ILLUSTRATED MONTHLY MAGAZINE

Edited by

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*Upper : GRAY-CHEEKED THRUSH (*Hylocichla minima*)*
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*Lower : AMERICAN ROBIN (*Turdus migratorius*)*
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see vol. xlvi, pp. 364-368)

Specially painted by Roger Tory Peterson

BRITISH BIRDS

VOL. XLVIII, NUMBER 1, JANUARY 1955

AMERICAN LAND BIRDS IN WESTERN EUROPE

By W. B. ALEXANDER and R. S. R. FITTER

DURING the past ten years it has become increasingly apparent that the status of American land-bird vagrants in the British Isles would have to be reconsidered. One of us (R.S.R.F.) wrote in 1950 to the B.O.U. List-Committee, which was then preparing the *Check-List* published in 1952, suggesting that the time was ripe for such a reconsideration, but this view was not accepted by the Committee. We were therefore very glad of the opportunity afforded when, in view of the interest aroused by the records of the Red-eyed Vireo* at Tuskar Rock in 1951 and of the American Robin on Lundy in 1952 (*antea*, vol. xlv, pp. 364-68, 378-9), the Editors of *British Birds* asked us to review the older records of American land-birds in western Europe. In the meantime there has been a brief general survey of the problem by Fisher (1953), and Williamson (1954) has examined the meteorological background of the arrival of several Nearctic species in Scotland in the autumn of 1953.

Most authors of comprehensive works on British birds, down to *The Handbook* (1938-41), have held that small land-birds could not possibly cross the Atlantic unaided, and that any records of American Passerines, if correctly identified and authenticated, must therefore relate either to escaped cage-birds or to birds given some sort of assisted passage. Saunders (1889), indeed, refused even to accept that the two American cuckoos could have crossed the Atlantic "without human assistance". In this he dissented from the B.O.U. Committee, which in its *List* of 1883, produced under the auspices of Newton, had accepted these and other American land-birds as genuine migrants. This was, of course, not Saunders's only difference of opinion with Newton. Withersby and his colleagues, from their 1912 *Handlist* onwards, reverted to Newton's more liberal view over the cuckoos, but were still unable to accept the genuineness of the migrant status of such birds as the Baltimore Oriole in Shetland in September 1890 or the Slate-colored Junco in Co. Clare in May 1905.

The problem has been complicated by the fact that undoubtedly

* Scientific names are not given in the text unless the species is not one of those that appears in the systematic list on pages 4-14.

some of the records have been due to escaped cage-birds or to attempts at acclimatization. Attempts were made to introduce the Passenger Pigeon in Berwickshire before 1867, the Red-winged Blackbird at Inveraray in 1886, and the American Robin at Guildford in 1910, and each of these yielded an occurrence not far away. Gray (1871) recorded an instance where American White-winged Crossbills were captured at sea, some escaping off the Irish coast and others in Liverpool. It would be unscientific, however, to allow these events, all rather a long time ago, to continue to block the reconsideration of the status of American land-bird migrants as a whole.

The objection that these migrants must have had an assisted passage has now been shown to represent almost the opposite of the truth. "Speed," as Williamson (1954) points out, "is the *sine qua non* of a successful transatlantic crossing, and it is very doubtful if any small or medium-sized Passerine or wader could make it other than by a continuous down-wind drift in the strong westerly airstream of a vast Atlantic low". Any bird that tarried on a ship would lose weight too rapidly to enable it to reach land unless it succeeded in finding food. Birds might of course be fed by passengers or crew, but only seed-eaters would be likely to get sufficient nourishment to enable them to continue the journey, and even then it would be necessary for the downwind drift to continue for them to have a chance of making land.

In this paper we seek to show that statistical analysis of the 103 records of North American land-birds in western Europe up to and including 1953 which can be dated to a month reinforces the *a priori* conclusions of Williamson. These records fall into a definite pattern, with a marked peak in the autumn and a less marked one in the spring. The pattern for land-birds is paralleled in that for wading birds, which have always been accepted as genuine migrants, though it is not apparent why a Semi-palmated Sandpiper (*Calidris pusilla*) should be able to cross the Atlantic unaided if a Baltimore Oriole could not. Though it is possible that some of the land-birds included in the following table are escaped cage-birds, that is a possibility that always has to be reckoned with. Few species are not kept in captivity by some bird-fancier somewhere, and any bird appearing in an unusual place may have escaped from an aviary or collection. What cannot be accepted is that birds tend to escape more at the normal migration periods than at other times of year.

Table I includes all the North American waders, herons, cranes and rails recorded for western Europe that can be dated to a month. Records of the American Bittern (*Botaurus lentiginosus*) are so numerous that they are shown separately in brackets, but are also included in the totals. Three waders have been omitted on the ground that they might have originated in Greenland or Siberia, viz. Pectoral Sandpiper (*Calidris melanotos*), which is

far and away the most numerous American wader recorded in the British Isles, Baird's Sandpiper (*C. bairdii*) and Eskimo Curlew (*Numenius borealis*).

TABLE I—NORTH AMERICAN WADING BIRDS IN WESTERN EUROPE

Month by month summary of records of herons, cranes, rails and waders with those of the most frequently reported American Bittern shown separately in brackets

Month	British Isles	Continent	Total
July	6	—	6
August	16	2	18
September	43	2	45
October	49 (13)	4 (12)	53 (25)
November	25 (15)	3	28 (15)
December	13 (11)	1	14 (11)
January	9 (3)	2	11 (3)
February	3 (2)	—	3 (2)
March	3 (1)	—	3 (1)
April	6	1	7
May	10	3	13
June	1	1	2
Total	184 (45)	19 (12)	203 (57)

The most interesting features of this Table are the marked autumn passage peak, the equally marked but much smaller spring one in May, and the rapidity with which records, except for the American Bittern, fall off after October, suggesting that the birds either die, reorient themselves back to the other side of the Atlantic, or pass on to parts of the Continent where they are not observed. Very few waders seem to stay for a period, as did the Lesser Yellowlegs (*Tringa flavipes*) at Cambridge sewage farm from March 1934 to September 1935. The disparity between the number of records for the British Isles and for the Continent, although no doubt partly due to better coverage by bird-watchers in Britain, shows to how great an extent the British Isles provide a refuge for storm-blown American migrants.

Table II gives a similar analysis for North American land-birds, including Passerines, hawks, owls, pigeons and birds of the various near-Passerine orders. The birds included in the Table are specified in detail in the Systematic List below, and only records set out at the beginning of each species account, not those more doubtful ones discussed in the text of the account, are included in the Table. Records of the Yellow-billed Cuckoo are so numerous that they are shown separately in brackets, but are also included in the totals. Land-birds breeding in Greenland have been excluded, as otherwise the very large number of records of the Greenland Wheatear (*Enanthe enanthe leucorrhoa*), Greenland Redpoll (*Carduelis flammea rostrata*) and Lapland Bunting (*Calcarius lapponicus*) would have had to be included. The birds omitted under this provision are the American Peregrine and the American Water Pipit.

TABLE II—NORTH AMERICAN LAND-BIRDS IN WESTERN EUROPE

Month by month summary of records of Passerines, hawks, owls, pigeons etc., with those of the most frequently reported Yellow-billed Cuckoo shown separately in brackets

Month	British Isles	Continent	Total
July	2	1	3
August	2	—	2
September	7	1	8
October	22 (10)	14 (2)	36 (12)
November	11 (7)	9 (4)	20 (11)
December	6	2	8
January	—	—	—
February	3	—	3
March	6	—	6
April	2	—	2
May	9	1	10
June	5	—	5
Total	75 (17)	28 (6)	103 (23)

Perhaps the most interesting feature of this Table is not the existence of the two peaks but the fact that the spring land-bird peak is proportionately larger than the spring wader one. The autumn peak is also more concentrated into October, though this is largely due to the preponderance of the Yellow-billed Cuckoo in the dated records. Even without it, however, there is a marked autumn passage of land-birds, which can hardly be explained by a sudden opening of aviary doors.

SYSTEMATIC LIST OF NORTH AMERICAN LAND-BIRDS OCCURRING IN WESTERN EUROPE

SWALLOW-TAILED KITE (*Elanoides forficatus*)

1805, Sept. 6; Shaw Gill, Hawes, Wensleydale, Yorks.

1843, June; R. Mersey, Ches./Lancs.

1853, April; Eskdale, Cumberland.

1859, May 25; Helmsley, Yorks.

c1859; Glaisdale, Yorks.

Now rarely seen north of South Carolina, but formerly a common bird in the north-central United States and straggling to southern Canada. Accepted as British by the 1883 B.O.U. Committee, under the influence of Newton, but rejected by that of 1915, which followed Saunders. Records in Argyllshire in 1772 and in Surrey in 1833 are suspect on the grounds of vagueness and likelihood of confusion with the native Red Kite (*Milvus milvus*), which was already scarce and unfamiliar in many districts by the beginning of the last century; and neither are definite autumn records. The Wensleydale bird, which was captured alive in a thunderstorm and later escaped, has an excellent claim to be regarded as a genuine migrant. The only reason for doubting its genuineness is Saunders's statement that there was reason for suspecting it had previously been in confinement, but like so many of the older writers he did not specify this reason.

The second bird with a reasonable claim is the Mersey one, which was in the Macclesfield Museum for some years. The only thing that can be said against it is that it might have been brought over on a ship and released in Liverpool, and that June is a curious date for a transatlantic migrant. For both the 1853 and 1859 birds there is some supporting evidence, and it is not just a case of the use of the name "Swallow-tailed Kite" for the Red Kite.

EASTERN GOSHAWK (*Accipiter gentilis atricapillus*)

1869, cMay; Schiehallion, Perthshire.

1870, Feb.; Galtee Mts, Tipperary.

Feb. or Mar.; Parsons Town, Birr, Offaly.

1919, Feb. 24; Strabane, Tyrone.

1935, Dec. 23; Athenry, Galway.

Dec. 28; Tresco, Scillies.

Breeds in the eastern part of N. America and partially migrates southwards. Saunders was doubtful of the Perthshire record, and the B.O.U. 1915 *List* rejected all the first three, as did the 1912 *Handlist*. The 1919 record appears to have swung opinion round.

RED-TAILED HAWK (*Buteo jamaicensis*)

1860, autumn; Nottinghamshire.

An old record, at which both the B.O.U. Committees looked askance, and which, as Coward said, cannot now be proved. There is some southward movement of this bird in eastern N. America in autumn.

RED-SHOULDERED HAWK (*Buteo lineatus*)

1863, Feb. 26; Kingussie, Inverness-shire.

A somewhat similar record to the last, square-bracketed by both B.O.U. Committees on the ground that it was "probably due to the mistake of a dealer". However, the bird moves south in the eastern United States in autumn and the record is not inherently more unlikely than the Eastern Goshawk or the American Sparrowhawk.

BALD EAGLE (*Haliaeetus leucocephalus*)

Chislett (1953) considers there is some doubt as to the Yorkshire origin of the bird presented to the Scarborough Museum in 1936-37 as a White-tailed Eagle (*H. albicilla*) but subsequently identified as this species. P. A. Clancey believes it is the eagle recorded by Nelson as having been trapped near Scarborough on 17th January 1865, but this cannot be absolutely proved. One was killed in Sweden about 1850. There are several records for Bermuda. It is mainly resident but some northern birds move south.

AMERICAN PEREGRINE (*Falco peregrinus anatum*)

1891, Oct. 31; Newbold Verdon, Leicestershire.

1910, Sept. 28; Humberstone, Lincolnshire.

Two generally accepted records, but since the bird breeds in Greenland, they are omitted from the totals in Table II.

EASTERN PIGEON-HAWK OR MERLIN (*Falco columbarius columbarius*)

1920, Nov. 11; South Uist, Outer Hebrides.

This bird was at first thought to be an aberrant of the European race of the Merlin, but is now considered to be referable to the typical race (Meinertzhagen and Williamson, 1953).

AMERICAN SPARROWHAWK OR KESTREL (*Falco sparverius*)

1901; Birkendegaard, Kalundborg, Denmark.

This Danish record at the end of 1901 is the only one for western Europe.

GAME-BIRDS (*Galliformes*)

Several attempts have been made to introduce various North American game-birds, notably the Prairie Chicken (*Tympanuchus cupido*) and the Bob-white (*Colinus virginianus*), which are in any case non-migratory, so that it hardly seemed worth while even to list the recorded occurrences.

PASSENGER PIGEON (*Ectopistes migratorius*)

1825, Dec. 31; Monymead, Fife.

1840; Gravelle-Ste. Honorine, Seine-Inf., France.

1844, early July; Royston, Herts.

1848; near Tralee, Kerry.

Another bird that was accepted by the B.O.U. in 1883 under the auspices of Newton, but rejected in 1915 under those of Saunders. Saunders said that it was notorious that from 1830 onwards many Passenger Pigeons were brought over and turned loose in Britain, but this would not invalidate the 1825 record. The Tralee bird was found in a state of extreme exhaustion and there is no reason to suppose it had not just flown the Atlantic. The only thing against the Royston bird is the time of year, coupled with a rather vague sight record of another Passenger Pigeon at Tring, not far away, at about the same time, suggesting the possibility of a source of escapes. One was shot at Mellerstain, Berwickshire, prior to 1867, shortly after some had been liberated near-by. One obtained at Mulgrave, Yorkshire, on 12th October 1876, is also stated to have had the worn plumage of a caged bird. Thompson (1850) said they were occasionally brought over in vessels and kept by pigeon-fanciers.

YELLOW-BILLED CUCKOO (*Coccyzus americanus*)

- 1825, autumn; Youghal, Co. Cork.
 Before 1833; Poole Harbour, Dorset.
 1832, autumn; Lawrenny, Pembrokeshire.
 Bray, Co. Wicklow.
 1835; Cornwall.
 1870, Oct. 26; Aberystwyth, Cardiganshire
 1874, Oct. 22; Hainault, Belgium.
 Oct.; Lundy Is., Devon.
 1883, Oct. 28; Turin, Italy.
 1895, Oct. 5; Bridport, Dorset.
 1896, early Oct.; Isle of Wight.
 1899, Nov. 10; Anglesey.
 1901, Oct. 6; Somerset.
 Oct. 30; Hampshire.
 1904, Nov. 6; Colonsay, Inner Hebrides.
 1921, 3rd week Nov.; Scilly Is.
 1924, Nov. 6; Charente-Inférieure, France.
 1927, Nov. 25; Lucca, Italy.
 1932, Nov. 2; Sicily.
 Nov. 19; Azores.
 1936, Oct. 22; Orkney.
 1952, Nov. 1; Exnaboe, Shetland.
 Nov. 4; Eastbourne, Sussex.
 1953, Oct. 3; Muck, Inner Hebrides.
 Oct. 5; Caskieben, Nairnshire.
 Oct. 10; Montrose, Angus.
 Nov. 14; Cloughton, Yorks.

Has occurred in Europe on 28 occasions since 1825, and is now completely accepted as a genuine migrant, though Saunders doubted this. All dated records are for October or November. There is one undated record for Denmark.

BLACK-BILLED CUCKOO (*Coccyzus erythrophthalmus*)

- 1858; Lucca, Italy.
 1871, Sept. 25; Killead, Antrim.
 1886, July 20; Nisson, Hérault, France.
 1932, Oct. 27; Scilly Is.
 1950, Nov. 6-8; Kintyre, Argyll; a flock.
 1953, Oct. 11; Foula, Shetland.

There is also an undated museum specimen in the Azores. Saunders questioned the genuineness of transatlantic migration in this species, though *The Handbook* accepts it.

SCREECH OWL (*Otus asio*)

This being a non-migratory species, it seems likely that the pair (of which one was shot) seen near Kirkstall Abbey, Yorkshire, in the breeding season of 1852 must have been escapees. The same applies to the bird recorded near Yarmouth in Stevenson (1866).

AMERICAN HAWK OWL (*Surnia ulula caparoch*)

- 1830, March; coast of Cornwall.
 1847, Aug. 25; Backwell Hill, Yatton, Somerset.
 1863, Dec.; Maryhill, Lanarkshire.

Two more specimens (near Greenock, Renfrewshire, November 1868; Northamptonshire, 19th October, 1903) have been recorded without the subspecies having been ascertained; another bird of unknown race near Greenock, in December 1871, has had doubt thrown on its authenticity; and a fourth (Shetland, winter 1860) is thought to have been of the European race. It is not clear why there has been so little hesitation in accepting this species as a genuine migrant, when it is just as likely to have escaped from captivity as some other species which have always been doubted.

NIGHTHAWK (*Chordeiles minor*)

1927, Sept. 17; Tresco, Scilly Is.

This bird having come since Saunders's day, its genuineness as a migrant has never been questioned. It appeared at about the same time as a Buff-breasted Sandpiper (*Tryngites subruficollis*), an American Robin and a Pied-billed Grebe (*Podilymbus podiceps*).

BELTED KINGFISHER (*Megaceryle alcyon*)

1845, Oct. 26; Annsbrook, Co. Meath.

1845, Nov.; Luggala, Co. Wicklow.

1899, Dec. 17; De Steeg, Gelderland, Holland.

1901, Sept.; Westmann Is., Iceland.

1908, Nov.; Sladesbridge, Wadebridge, Cornwall.

There is also an undated museum specimen for the Azores. The two records from Ireland in 1845 were accepted by the 1883 B.O.U. Committee, but Ussher (1900) suggested they might have escaped from the same cage, and the authors of the *Handlist* (1912) stated they were "undoubtedly due to a fraud", although one of them, writing six years later, only said that "considerable doubt attaches to at least one of the Irish records" (Jourdain, 1919).

The Cornish record did not come to light for ten years, but in view of the letter from the man who shot it (Stevenson, 1919), it is hardly possible to refuse to accept the record unless the credentials of all other rare birds not actually shot by an ornithologist are to be called in question.

FLICKER (*Colaptes auratus*)

1836, autumn; Amesbury Park, Wilts.

This woodpecker is migratory, and is an unlikely cage-bird. The most suspicious circumstance about its occurrence is that another, non-migratory, American woodpecker, the Downy, occurred in Dorset in December of the same year. In view of the explicit and obviously trustworthy statements of the man who shot the Flicker (Marsh, 1859), the phrase "said to have been shot in Wiltshire" used about the record by most subsequent authors is distinctly misleading. Clearly the only question is whether somebody had liberated it nearby, and that we shall never know.

HAIRY WOODPECKER (*Dendrocopos villosus*)

Two are recorded for Yorkshire, one from Brighouse prior to 1807 and one from Whitby early in 1849, but as the bird is non-migratory, they cannot be regarded as genuine migrants, even if correctly identified. An Oxfordshire record in 1882 was probably due to an exchange of skins.

DOWNY WOODPECKER (*Dendrocopos pubescens*)

Another non-migratory woodpecker, which has been recorded twice, viz. Bloxworth, Dorset, December 1836; and Frampton Cotterel, Glos., 14th January, 1908.

TREE SWALLOW (*Iridoprocne bicolor*)

1850; near Derby.

This bird was shot from among Sand Martins (*Riparia riparia*) and reported by John Wolley, who with Newton believed in its authenticity, though from the 1883 B.O.U. *List* onwards it has always been square-bracketed. There seems no real reason why it should not be regarded as a genuine migrant. Moreover, since our Sand Martin is identical with the American Bank Swallow, some of the Sand Martins it was flying with could have been trans-atlantic migrants too.

PURPLE MARTIN (*Progne subis*)

1839 or 1840; Kingstown, Co. Dublin.

1854; Colne Bridge, Huddersfield, Yorks.

The Irish bird is in the National Collection at Dublin, though most previous writers have sheltered behind "said to have been" shot in Ireland. No evidence is adduced to show that it might have been shot anywhere else. The Huddersfield record is not now provable. Harting (1866) hints at fraud in connection with the Brent Reservoir (Middlesex) record of September 1842.

CATBIRD (*Dumetella carolinensis*)

1840, Oct. 28; Heligoland.

1908, May 2; Leopoldshagen, Anklam, Germany.

No British records.

MOCKING-BIRD (*Mimus polyglottos*)

Non-migratory, so that the few records must be of escaped cage-birds.

BROWN THRASHER (*Toxostoma rufum*)

1836, late autumn; Heligoland.

The only European record.

AMERICAN ROBIN (*Turdus migratorius*)

- 1820; Aspang, Austria.
 1846, autumn; in game-market, Vienna, Austria.
 1851, end Nov.; Meiningen, Germany.
 1874, Oct. 14; Heligoland.
 1876, Apr. or May; Dover, Kent.
 Oct. 31; Upjever, Oldenburg, Germany.
 1891, May 4; Shankill, Co. Dublin.
 1892, Dec.; L. Gill, Sligo.
 1893, Oct.; Leicester.
 1894, Dec.; Co. Leitrim.
 1913, Nov. 23; Ueckermünde, Pomerania, Germany.
 autumn; München-Gladbach, Germany.
 1927, Sept. 15; Shrewsbury, Salop.
 1937, Dec. 21; Sevenoaks Vine, Kent.
 1952, Oct. 25-Nov. 8; Lundy, Devon.

A difficult case of a highly migratory bird which is also a cage-bird and has been the subject of several attempts at introduction in Britain. Lord Northcliffe's attempt to introduce them near Guildford, Surrey, about 1910, was presumably responsible for the bird which appeared in Richmond Park in May 1912 and began to build a nest. The three Irish records in 1891-94 also suggest the possibility of escapes from an aviary, especially as two were from adjoining counties. The Shrewsbury bird appeared only two days before a Nighthawk in the Scillies. On the whole the pattern suggests that most are genuine migrants: all except two of the dated records are from September-December, and those two represent a possible return spring migration.

HERMIT THRUSH (*Hylocichla guttata*)

- 1825, Dec. 22; Klein Zerbst, Anhalt, Germany.
 1836, Oct.; Heligoland.
 1851; Oberfals, Black Forest, Germany.

There is also an undated museum specimen for the Azores. No British records.

OLIVE-BACKED THRUSH (*Hylocichla ustulata*)

- 1843, autumn; Genoa, Italy.
 1847, Oct. 6; Namur, Belgium.
 1869, Oct. 2; Heligoland.
 1878; Rovereto, Tirol, Italy.
 1885, Oct. 15-20; Chiny, Belgium.
 1896, Oct.; Namur, Belgium.
 1906, Oct.; La Pinteletz, Ghent, Belgium.

The 1847 bird was of the typical race (*H. u. ustulata*), the rest all of the eastern race (*H. u. swainsoni*). A remarkably restricted migration period, recalling that of the two cuckoos, all the dated records being in October. No British record.

GRAY-CHEEKED THRUSH (*Hylocichla minima*)

- 1901, Nov. 2; Isle of Elba, Italy.
 1953, Oct. 5; Fair Isle, Shetland.

The Scottish bird was the first *Hylocichla* to occur in Britain, though eleven specimens of three species have occurred on the Continent. This is probably because thrushes have never been caught for food in this country on the scale that still prevails on the Continent.

GOLDEN-CROWNED KINGLET (*Regulus satrapa*)

1897, Oct. 19; Wharnton Clough, Oldham, Lancs.

A record that was not published till 1922 (Stubbs, 1922) and is not mentioned in *The Handbook*. The bird was identified as *R. satrapa* by the late H. F. Witherby, but because it was believed that it could not have crossed the Atlantic, it was considered more likely to belong to a hitherto undiscovered Asiatic race of Firecrest (*R. ignicapillus*).

RUBY-CROWNED KINGLET (*Regulus calendula*)

1852, summer; Kenmore Wood, L. Lomond, Scotland.

1871, Sept. 21; Highnam, Glos.

1903, Oct. 31; mid-Atlantic (53° 24' N., 30° 15' W.).

Saunders was sceptical of the Scottish record, but Coward thought its history satisfactory; it is another case of whether or not one is prepared to believe the man who shot it. A further specimen, said to have been obtained in Co. Durham in 1852, turned out to be a Firecrest (*R. ignicapillus*).

AMERICAN WATER PIPIT (*Anthus spinoletta rubescens*)

There are seven records of this race from Europe (three from Heligoland and one each from St. Kilda, Fair Isle, Great Saltee and Italy), but as it breeds in Greenland, it is omitted from Table II.

CEDAR WAXWING (*Bombycilla cedrorum*)

Two were reported by Newton as having been taken at Stockton-on-Tees, Co. Durham, early in 1850, but he later withdrew the record.

RED-EYED VIREO (*Vireo olivaceus*)

1859, May; Chellaston, Derbyshire; two.

1951, Oct. 4; Tuskar Rock, Co. Wexford.

The occurrence of the Tuskar bird as an undoubted genuine drift-migrant makes it necessary to reconsider the opinion of the older writers that the Chellaston birds, caught by a bird-catcher, were escaped or released cage-birds.

BLACK-AND-WHITE WARBLER (*Mniotilta varia*)

1936, mid-Oct.; Scalloway, Shetland.

There is no reason whatever to doubt the genuineness of the migrant status of this bird, which appeared at the same time as a Yellow-billed Cuckoo.

PARULA WARBLER (*Parula americana*)

1913, Oct.; Viki Myrðal, Iceland.

No British record.

YELLOW WARBLER (*Dendroica petechia*)

1904, May; Axwell Park, Co. Durham.

This specimen of the eastern race (*D. p. aestiva*) now has a good claim to be regarded as the first European record of the species, and not to be an escape, as the authors of the *Handlist* suggested.

BLACK-THROATED GREEN WARBLER (*Dendroica virens*)

1858, Nov. 19; Heligoland.

No British record.

BOBOLINK (*Dolichonyx oryzivorus*)

There are two undated records from Heligoland.

MEADOWLARK (*Sturnella magna*)

1854, Oct.; Norfolk.

1860, March; Thrandeston, Suffolk.

1876, Oct. 13; S. Walsham, Norfolk.

Together with an undated record from Cheltenham, Glos., many years prior to 1871, these three records have long been dismissed as obvious escapes, but it is a curious coincidence that two of the birds should have escaped in one of the most likely months for a normal American migrant to be seen.

YELLOW-HEADED BLACKBIRD (*Xanthocephalus xanthocephalus*)

An undated record from Denmark is the only one for Europe.

RED-WINGED BLACKBIRD (*Agelaius phoeniceus*)

1824, June; Holton, Suffolk.

1843, June 2; Barton Broad, Norfolk.

1844, autumn; Shepherd's Bush, Middlesex.

1863, Dec. 25; Sidlesham, Sussex.

1864, Oct.; Lombardy, Italy.

1864 or 1865, June; Romney, Kent.

1865, June 22-16; Liphook, Hants.

1866, March 21; Hove, Sussex; three.

June 12; Banff.

1877, March; Adwick-le-Street, Yorks.

1880, May 18; Holy Island, Northumberland.

spring, Bovingdon, Herts.

1881, end July—early Aug.; Swanpool, Falmouth, Cornwall.

1882, May 17; Hadleigh, Suffolk; two.

1885, spring; Salthouse, Norfolk.

1886, Oct. 27; Nash Lighthouse, Glamorgan.

There are undated records for near London and East Lothian. There seems little doubt that some at least of these records are

due to escapes, for this is a favourite cage-bird, the records all relate to males, and the concentration of records in S.E. England during 1863-66 is suggestive. A bird found at Rannoch, Perthshire, on 10th May 1886, had almost certainly come from Inveraray, where the Duke of Argyll had released several on 20th April. There is not a good pattern of records, and it is a fact that two of the three autumn records are rendered suspect by association with known or possible releases. The species is incorrectly stated in the *Handlist* to be non-migratory, for it is almost entirely a summer-visitor in the northern part of its range (Canada, New England and New York).

BALTIMORE ORIOLE (*Icterus galbula*)

1890, Sept. 26; Shetland.

Another presumable drift-migrant.

RUSTY BLACKBIRD (*Euphagus carolinus*)

1881, Oct. 4; near Cardiff, Glamorgan.

1938, July-Aug.; St. James's Park, London.

Of these two records, the former would seem to be more likely to be a genuine drift-migrant and the latter an escaped cage-bird.

PAINTED BUNTING (*Passerina ciris*)

1802; Portland, Dorset.

Montagu considered this bird had escaped from a ship going up Channel, but this can no longer be regarded as a certain solution.

AMERICAN GOLDFINCH (*Spinus tristis*)

A specimen of this bird was taken on Achill Is., Co. Mayo, on the very likely date of 6th September 1894, but its plumage suggested that it had been caged.

AMERICAN WHITE-WINGED CROSSBILL (*Loxia leucoptera leucoptera*)

1838; Worcester.

1841, Feb.; Jedburgh, Roxburghshire.

1845, Sept. 17; Exmouth, Devon.

1849, cMarch 28; Edwinstowe, Notts.; four.

1870, Oct. or earlier; at sea on a boat arriving at Great Yarmouth, Norfolk.

The subspecific identity of several other specimens is in doubt. On at least two occasions birds have alighted in the rigging of a transatlantic ship, and Gray (1871) relates a case where some were captured, two escaping near the Irish coast and two more in Liverpool. This incident has been made the excuse for square-bracketing all records of this race, and indeed to some extent all records of North American Passerines in Britain.

SLATE-COLOURED JUNCO (*Junco hyemalis*)

1905, May 30; Loop Head, Co. Clare.

1914, Nov. 28; Rome, Italy.

The Irish bird is another which has been unjustifiably presumed to have escaped from captivity.

WHITE-THROATED SPARROW (*Zonotrichia albicollis*)

1867, Aug. 17; Aberdeen Links, Scotland.

1872, March 22; Brighton, Sussex.

1893, Feb. 13; Holderness, Yorks.

1909, May 18; Flannan Is., Outer Hebrides.

All these have been written off as escaped cage-birds, but at least the last may reasonably be supposed to be a normal drift-migrant.

Records from time to time of the Northern Shrike (*Lanius excubitor borealis*), the American Rough-legged Hawk (*Buteo lagopus sancti-johannis*), and the Saw-whet Owl (*Aegolius acadica*) were due to mistaken identifications.

REFERENCES

Only references cited in the text are listed here. The full list of original references for each record has been deposited at the Edward Grey Institute at Oxford.

BRITISH ORNITHOLOGISTS' UNION (1883): *A List of British Birds*. London.

(1915): *A List of British Birds*. London.

CHISLETT, R. (1953): *Yorkshire Birds*. London and Hull.

COWARD, T. A. (1920): *The Birds of the British Isles and their Eggs*. London.

DALGLEISH, J. J. (1880): *Bull. Nuttall Orn. Cl.*, 5: 65-74, 141-150, 210-221.

FISHER, J. (1953): *Country Fair*, 4(3): 35-39.

FREKE, P. E. (1879): *Sci. Proc. Roy. Dublin Soc.*, N.S. 2: 273.

(1880): *Sci. Proc. Roy. Dublin Soc.*, N.S. 3: 22.

GRAY, R. (1871): *The Birds of the West of Scotland*. Glasgow.

HARTERT, E. *et al.* (1912): *A Handlist of British Birds*. London.

HARTING, J. E. (1866): *The Birds of Middlesex*. London.

(1872): *A Handbook of British Birds*. London.

JOURDAIN, F. C. R. (1919): "Belted Kingfisher in Cornwall". *Brit. Birds*, xii: 160-161.

MARSH, G. S. (1859): *Zoologist*, 1859, p. 6327.

MEINERTZHAGEN, R. (1954): *Bull. B.O.C.*, 74: 103.

— and WILLIAMSON, K. (1953): "Check-list of the birds of Great Britain and Ireland" (1952): some comments". *Ibis*, 95: 365.

MONTAGU, G. (1802): *Ornithological Dictionary*. London.

NEWTON, A. (1871-82): Editor, *Yarrell's A History of British Birds*. London.

SAUNDERS, H. (1889): *An Illustrated Manual of British Birds*. London.

STEVENSON, F. G. (1919): "Belted Kingfisher in Cornwall". *Brit. Birds*, xii: 216.

STEVENSON, H. (1866): *The Birds of Norfolk*. London.

STUBBS, F. J. (1922): "Note on a possible Lancashire example of the Gold-crested Kinglet". *Lancs. and Ches. Fauna Ctee. 8th Ann. Rep.*, pp. 13-15.

USSHER, R. J. and WARREN, R. (1900): *The Birds of Ireland*. London.

WILLIAMSON, K. (1954): "American birds in Scotland in autumn and winter, 1953-54". *Scot. Nat.*, 66: 13-29.

WITHERBY, H. F. *et al.* (1938-41): *The Handbook of British Birds*. London.

WILSON'S PHALAROPE IN FIFE :

A NEW BRITISH BIRD

By FRANK D. HAMILTON and KEITH S. MACGREGOR

ON the afternoon of the 11th September 1954 we were bird-watching on an area of reclaimed ground between North Queensferry and Rosyth Dockyards, Fife, where there are two shallow fresh water pools. The two pools are separated from each other by a raised bank, and it was whilst watching from behind this bank that we came across a noticeably pale wader which was feeding beside a party of Ruff (*Philomachus pugnax*).

The bird immediately excited our curiosity and, at first, due to the general pale colouring and method of feeding we suspected a phalarope (*Phalaropus* sp.) in winter plumage. After a few moments, however, we realised that the bird had yellow legs, and when it fluttered a few yards, saw that it had no wing-bar. It also had a white rump and tail. We then knew that this was something most unusual and the following description is compiled from notes taken on the spot by ourselves and others, especially D. G. Andrew, Dr. W. J. Eggeling, Miss M. I. Kinnear, Prof. M. F. M. Meiklejohn and George Waterston.

Size approximately that of Curlew Sandpiper (*Calidris testacea*) which was also present. General appearance of a very white bird, with longish neck and small head. Bill black, straight, needle-like and slightly longer than the length of the head. Throat, breast and under-parts, pure white. Forehead, white with ashy-grey crown and nape. White eye-stripe, separated from white of under-parts by pale greyish line through eye, which continued down side of neck to join with grey of shoulder; the line on the right-hand side was more noticeable than that on the left, but it became less distinct during the time the bird stayed. Mantle, ashy-grey as crown, scapulars and coverts darker, with faint buff edges, giving a scaly appearance at close quarters. Primaries, dark brown. Rump, white, as in Wood Sandpiper (*Tringa glareola*). Tail, white very faintly barred grey at tip. Underwing, white. Legs rather long and slender, colouring varying according to light conditions, appearing orange-yellow in bright light, and ochreous yellow at other times. Colour of feet similar.

From this description it is clear that the bird was a Wilson's Phalarope (*Phalaropus tricolor*) and it was first identified as such by D. G. Andrew from R. T. Peterson's American work *A Field-Guide to the Birds*.

During the first few days the bird fed at the edge of the pool in a very energetic manner, running fast after insects, and picking these off the tops of the weeds and off the ground, with quick side to side movements of the head and it was not seen to probe at any time. Whilst it was feeding the legs were flexed and the head and neck were held close and parallel to the ground, with the tail raised. Latterly, however, the bird spent a great deal of its time

swimming and apparently obtained its food from the bottom of the pool. On several occasions the Wilson's Phalarope was seen to spin very fast in one spot on land, 15-20 times, which is a characteristic habit of this species. The bird was always silent, both on the ground and in flight, except on one occasion when it was heard to give a loud, nasal "aangh" when threatened by a Redshank (*T. totanus*). The flight was fast and purposeful, often with Redshanks and Dunlin (*C. alpina*), with which it kept in perfect formation, but on occasions it would break off and land on its own. When flying it appeared very much a grey bird, having rather a bullet-shaped body, whilst the legs projected slightly beyond the tail.

According to the outline given by A. C. Bent (1927, *Life Histories of N. American Shore Birds*, Part I), the Wilson's Phalarope breeds in southern Canada and the western United States as far north as Alberta and Saskatchewan, east to Ontario and Illinois, south to Indiana, Colorado and Nevada, west to California, Oregon and Washington. The wintering range does not appear to be exactly known, but most records come from South America and, to a lesser extent, Mexico. On autumn passage, this species is a regular though fairly rare migrant on the east coast of the United States, from approximately Long Island southwards. The meteorological conditions for the ten days before the bird was first seen show that it might have reached Scotland via New York and the Quebec-Newfoundland region, thence across the Atlantic with a following wind of up to 40 m.p.h. A detailed discussion is not given owing to the uncertainty of the date of the bird's arrival. The appearance in late August or early September of a Stilt Sandpiper (*Micropalama himantopus*) in Yorkshire (see pages 18-20) and of three or more Lesser Yellowlegs (*Tringa flavipes*) on the south coast of England also prove the existence of conditions permitting a transatlantic crossing.

The Wilson's Phalarope at Rosyth was last seen on 5th October and, during its stay of three and a half weeks, was watched by at least 60 different people, including, apart from those already mentioned, Miss E. V. Baxter, Dr. John Berry, A. G. S. Bryson, A. B. Duncan, I. J. Ferguson-Lees, Len Fullerton, P. A. D. Hollom, John Hoy, J. H. B. Munro, Dr. R. S. Weir and Tom Weir. We would like to express our gratitude to Admiral Robson for his courtesy in allowing various observers to spend so much time on the dockyard land.

[We have been able to trace three previous reports of Wilson's Phalarope in the British Isles. In the Dyke Road Museum,

Brighton, Sussex, there is a single specimen described as follows in the 5th edition of the Museum's *Catalogue of Cases* (1927, pp. 199-200) by the editor, A. F. Griffith:

"This bird, almost if not quite the first of the kind to be recorded as obtained in Europe, was shot by Mr. W. Clarke of Mann Street, Hastings, near Winchelsea, Sussex, on the 1st May 1925 and taken to Bristow to be stuffed. It was examined the next day, before being skinned, by Mr. W. Ruskin Butterfield. A female, in her charming bridal plumage, she must have come a long way round from her usual nesting quarters in North America. This plumage is only assumed for about three months in the summer, the winter being spent in the southerly parts of the American continent, even as far south as Patagonia and the Falklands; the winter plumage, as in the case of the other two Phalaropes, being much less striking, though still beautiful. It was bought through Mr. Bristow's good offices by Mr. A. F. Griffith and given to the Museum.

Another female in similar plumage was reported as killed near Scalloway in the Shetlands, June 10th 1911. It passed into the Harpur Crewe collection from which it too was bought by Mr. Griffith. But as no accurate data have been ascertained to corroborate the original report, this bird has been relegated, till further evidence may be available, to the general collection at the Church Street Museum."

The Sussex record is included in John Walpole-Bond's *A History of the Birds of Sussex* (1938, p. 213) with the following comment: "so far it has not received universal recognition as a genuine visitor to the eastern hemisphere. Perhaps, therefore, it should be bracketed".

Another report is quoted by Montagu Browne in the section "Birds" in *A History of the County of Leicester* (1907, p. 149) as follows:

"A specimen of Wilson's Phalarope, *Steganopus Wilsoni* (Sabine), is said to have been obtained at Sutton Ambien near Market Bosworth, and the occurrence was mentioned in *Proc. Zool. Soc.* (1886), pt. 3, p. 297, and in the *Zool.* (1886), p. 256, but the authenticity of the record has not been fully established."

None of these reports is mentioned in *The Handbook*.—Eds.]

STILT SANDPIPER IN YORKSHIRE: A NEW BRITISH BIRD

By RALPH CHISLETT

ON 31st August 1954 Peter Waterton and Edward E. Jackson, who were staying at the Spurn Bird Observatory, noticed an unusual wader on marshy land north of Kilnsea, Yorkshire. The descriptions they gave did not fit any bird ever known to have visited the area. The same afternoon, about 1½ hours later, when they visited the place again, accompanied by G. H. Ainsworth, R. F. Dickens and myself, the bird could not be found.

On the following day the two boys, to whom full credit is due, again located the bird feeding in the same area; and on 2nd September R. F. Dickens went with them, saw the wader and immediately contacted G. H. Ainsworth and H. O. Bunce, the latter of whom made a special journey to see the bird the same evening. E. C. Dickinson and L. T. Wright also saw the bird on 2nd September. On 3rd September it was seen by Mr. and Mrs. W. A. Butterfield; and on 4th September by J. Cudworth, J. K. Fenton, R. V. Jackson, P. C. Quin, D. L. Robinson, E. S. Skinner and Misses F. E. Crackles and A. E. Leach, and again by R. F. D. and H. O. B. It was not seen after 4th September. I revisited the area on the 5th, but again failed to see the bird.

The following details are summarized from the notes and sketches that each of the above observers was asked by R. F. Dickens to make separately and to send to me before discussing the bird with anyone else or seeing their descriptions. The bird was seen at ranges down to twelve yards. The site was open but lighting varied.

Size. Slightly larger than Curlew Sandpipers (*Calidris testacea*), smaller than Redshanks (*Tringa totanus*) and Ruffs (*Philomachus pugnax*) and slightly smaller than the Reeves in whose company it was seen. Other species present for comparison were Dunlin (*C. alpina*), Ringed Plover (*Charadrius hiaticula*), Little Stint (*C. minuta*), Turnstone (*Arenaria interpres*) and Greenshank (*T. nebularia*).

General appearance. Compared with any of the above it was a noticeably dark grey bird from a distance. At close quarters the plumage had traces of buff and brownish. It was a tall bird for its (body) size.

Head. Crown dark grey-brown, browner towards nape. Nape, cheeks and sides of neck paler. J. C. says nape and hind-neck pale grey streaked darker. A prominent pale-greyish, broad superciliary stripe extended only very slightly behind the eye. Lores blackish.

Upper-parts. Boldly patterned on back with general effect rather like a grey Ruff. Scapulars and wing coverts blackish, edged light buff; some feathers, especially on left wing, brownish edged light buff. Primaries dark, brownish, extending slightly beyond tail when folded. Tail and coverts, dirty white, centre of tail darker. P. C. Q. noticed light barring on the tail, the outer tail-feathers being very pale but not white. J. C. says rump, upper tail-coverts and tail, pale greyish with darker barring, the sides of the tail white, graded to grey in centre. E. S. S. says whole tail-area whitish with grey barring.

Under-parts. Throat, foreneck and upper breast—buffish-grey, finely streaked. Paler around throat. Lower breast, belly and vent—*strongly barred* dark grey on pale brownish-grey or grey ground. Barring continuous on flanks and belly and through to tail, slightly more strongly marked on flanks.

The line of demarcation between the striations of the upper breast and the barring of the lower breast gave a suggestion of a gorget. Underwings pale. Pinkish tinge on secondaries (F. E. C.).

Soft parts. Eye—dark(?blackish). Legs—long, spindly, frequently flexed in an almost stilt-like manner (R. F. D.). Proportionately slightly longer than Redshank's giving the bird a tall appearance when seen on land (R. V. J.). All descriptions agree that in flight the *feet projected clearly beyond the end of the tail*. The legs usually appeared blackish but in bright sunlight a quite different impression was formed (H. O. B.). Dark, but in a good light, brownish-green (J. C.). Greenish-grey (E. S. S.). Leaden green (J. K. F.). Blackish with suggestion of dark greenish at top (R. F. D.). Not dark but a grey or ochre-shade (P. C. Q.). Bill—All agreed that the bill was blackish, long, slender and straight with a slight down-curve at the end. Slightly longer than Redshank's (R. F. D.). $1\frac{1}{2}$ times as long as the head (F. E. C.). J. C. says equal in length to Ruff's bill, but for size of bird proportionately longer.

Behaviour. Flight rather like Redshank's. Trailing edge of wing which was slightly paler, and whitish tail were only noticeable markings in flight. Trailed legs before landing and after take-off. Once when taking wing the bird called "tchoowk, tchoowk, tchoowk-tchoowk" rather like a Knot (*C. canutus*) (R. F. D.). When landing wings were held above back and several times in the course of feeding the bird raised its wings showing the pale underwing. On mud, picked at surface but did not probe deeply. Preferred to feed in deep water, often up to belly and swam frequently. Immersed whole of bill and frequently the head also, when feeding. Horizontal carriage of the body was noted by two observers, more like the carriage of a small slim Whimbrel (*Numenius phaeopus*) than that of a Redshank. The bird did not 'tip or nod'. When alone, or in company with a single Dunlin, the

bird was very tame, allowing approach to within about twelve yards.

The strongly barred under-parts, which everyone mentioned, suggested Grey-rumped Sandpiper (= Wandering Tattler) (*Heteroscelus incanus*), or Stilt Sandpiper (*Micropalama himantopus*). As the notes and drawings came in I began increasingly to suspect the latter. At the dates concerned an adult bird was likely to be in partial moult, and the barring suggested a remnant of breeding plumage*.

R. T. Peterson—*A Field Guide to the Birds* (of North America), A. C. Bent—*Life Histories of N. American Shorebirds* pt. 1, and P. A. Taverner—*Birds of Canada* were all consulted. Some of their descriptions of appearance and behaviour of Stilt Sandpiper fitted the bird very aptly. Taverner says "the spring bird with its heavily barred underparts is very distinctive." This was autumn but many adult waders have some breeding plumage until a later date, especially on breast &c. W. Rowan (in Bent) says "when wading the bird prefers to be belly deep—the carriage of the head makes the species unmistakeable. The bill is always held and thrust beneath the surface perpendicularly. This necessitates a straight neck." And Taverner again "a longer bill than any other sandpiper of similar size;" "in feeding may plunge its whole head and neck underwater". The only respect in which the bird appeared to differ somewhat from the available descriptions of Stilt Sandpiper was in the tail-coverts and tail, which might be due to moult, for I have no doubt that the bird was in a transitional stage from summer to winter plumage, which often increases difficulties of identification*.

Later, through the medium of Dr. J. D. Craggs and the generosity of Mr. R. Wagstaffe, we were able to inspect a skin of the Stilt Sandpiper. Bill, legs, barrings on under-parts and general plumage conformed to the descriptions made without access to picture, book or specimen other than the bird the observers watched, in a way I can only describe as remarkable. The skin was as I imagined it would be. The notes sent to me constitute the most complete description of the Stilt Sandpiper I have yet seen. I have no doubt that Mr. Wagstaffe's skin and the bird R. F. Dickens, H. O. Bunce and their friends saw were of the same species, and I congratulate them on the care they took to establish it.

* As we go to press, R. F. Dickens informs us that as a result of his examining over 50 skins of Stilt Sandpiper in the British Museum (Natural History) he has no doubt that the bird was in almost complete breeding plumage, lacking only the rust colour on the cheeks.—Eds.

SIBERIAN THRUSH ON THE ISLE OF MAY: A NEW BRITISH BIRD

By D. G. ANDREW, J. A. NELDER and MARY HAWKES

ON 2nd October 1954 an adult male Siberian Thrush (*Turdus sibiricus*) was trapped on the Isle of May. It had been glimpsed, but not positively identified, shortly before dusk on the previous day and was still present on the island when we left on the 4th. It had gone by the 7th. Two photographs of the bird, taken while it was being examined in the hand, are reproduced on plate 7. The following notes are based on the detailed description taken down at the time.

The general body colour was slate-black, against which the long, pure white eye-stripe stood out in brilliant contrast. The feathers on the centre of the belly and the under tail-coverts were broadly tipped off-white, but in the case of the under tail-coverts these whitish tips were not long enough to cover the blackish bases of the feathers and the resulting pattern was one of alternating black and white crescents.

The general colour of the wings was again slate-black with blackish flight-feathers. The complex pattern on the underwing can be seen in the lower photograph on plate 7. The rectangular white panels on the inner webs of the primaries and secondaries (absent on the four innermost secondaries and decreasing in extent on the outer primaries until practically non-existent on the second primary) combined with the white tips of the under greater coverts to form a broad white band running almost the whole length of the under-wing. A narrower, shorter band at the base of the wing was formed by the white bases of the under median coverts and the white tips of the under lesser coverts.

The tail had 12 rectrices, the feathers ending in a fine spike at the tip. The two central pairs were blackish: the remainder, with the exception of the outer pair, were blackish with small pure white wedges at the tips which were most extensive on the outer feathers. The outer pair were sooty, with the outer web narrowly tipped white as in the other feathers but with the inner web broadly tipped off-white. This feature can be seen in the upper photograph on plate 7 where the left hand outer tail-feather has been turned out of position to show the pattern.

Measurements and structure: wing 125 mm.; tarsus 30-31 mm.; bill: upper mandible 21 mm., lower mandible 5mm. shorter. The lower mandible had been broken off just short of the tip and the upper mandible had grown over this and was strongly decurved at the tip (just apparent in plate 7, upper). The weight when trapped about midday on 2nd October was 59.7 gm. It was re-trapped first thing next morning when it weighed 61.6 gm. The

top of the skull was noticeably flat and lacking in "forehead", giving the bird's head a much less rounded outline than is shown in the illustration in *A Field Guide to the Birds of Britain and Europe*, p. 222.

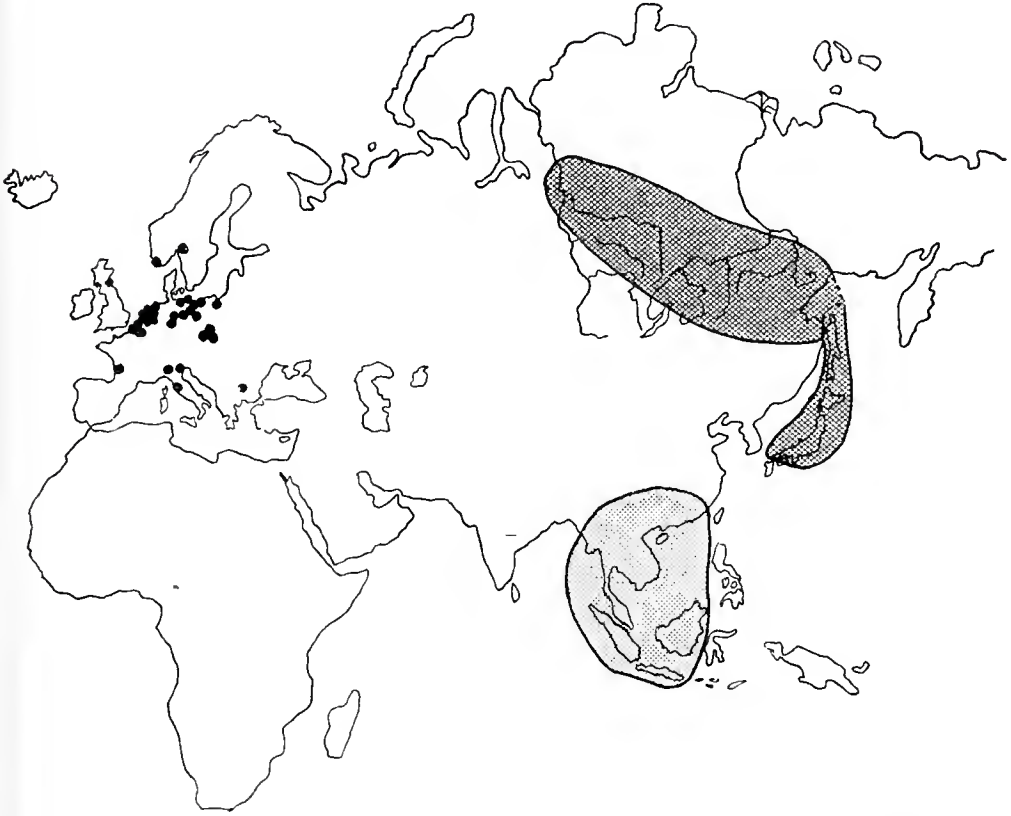
Soft parts: Gape orange-yellow; bill black, except for tip of upper and base of lower mandible which were horn; legs and feet—front of legs and top of toes purplish horn, back of legs, soles and joints dirty yellow; iris dark brown.

Field-characters: In stance, build and behaviour the bird was a typical thrush. In behaviour it most resembled a Blackbird (*Turdus merula*), tending to skulk under huts and other cover. It was not unduly shy. The white on the under-parts hardly showed up at all in the side view, and the bird appeared almost uniform slate-black with a pronounced bluish tinge except for a paler patch on the flanks (caused by white shafts to the flank feathers) and an appreciably darker colour on the head (caused by black centres to the crown feathers). Viewed from the front, the white belly merely showed up as a narrow whitish stripe between the legs. The white eye-stripe was always a most conspicuous feature. In flight the white tips to the tail-feathers showed up most strikingly as a row of disjointed white spots. The white band along the underwing immediately caught the eye and, when the wing was fully extended, we also had the impression of a narrower white line along the upper surface of the wing. The bird fed normally in spite of its deformed bill. The only call-notes heard were a gruff squawk when suddenly flushed at close quarters and a short "zit", very much like that of a Song Thrush (*Turdus philomelos*) but softer and perhaps purer, but it was a rather silent bird.

The arrival of this bird on the island coincided with a brief spell of south-east wind and drizzle which started during the night September 30th-October 1st and continued for most of the following day. Some Goldcrests (*Regulus regulus*) (apparently of the Continental race) came in during the small hours of the morning, but otherwise there was no sign of immigration until midday, when the first Redwings (*Turdus musicus*) of the autumn began to be seen (those trapped were of the Continental race, *T. m. musicus*). By the end of the day about 75 of these birds were on the island but the only other arrivals were a Pied Flycatcher (*Muscicapa hypoleuca*), at least 3 Bramblings (*Fringilla montifringilla*) and a Reed Bunting (*Emberiza schæniclus*), and it is rather remarkable that such a small-scale influx should have brought with it a migrant from Siberia.

An examination of the synoptic charts for September 1954 casts little light on the wanderings of this bird. Throughout the month pressure was generally high over south-east Europe and south Russia, with light winds, while a continuous stream of depressions passed eastwards across the Atlantic, then north-east across Europe. The south-east wind which brought this bird to

the island was localised over the northern North Sea and the east coast of Britain, suggesting a Seandinavian starting point for the flight across the North Sea, but the meteorological situation further east at that time does not allow any obvious interpretation of the bird's movements.



THE WORLD DISTRIBUTION OF THE SIBERIAN THRUSH (*Turdus sibiricus*)

(Compiled and drawn by Holger Holgersen)

The breeding range is indicated by the darker, cross-hatched area, the winter-quarters by the lighter, stippled portion. The various European records are shown by dots.

The typical race of the Siberian Thrush, *Turdus s. sibiricus*, breeds in central Siberia. The breeding range of the species extends eastwards to Japan; Japanese birds are separated as *Turdus s. davisoni*, and are characterised in the male, among other things, by a near or total absence of white on the belly and under tail-coverts. It is worth mentioning perhaps that the amount of white on the tail of the bird caught on the Isle of May was greater than that on most, if not all, the adult male skins examined at the British Museum. The species winters in south-east Asia. We are very grateful to Dr. Holger Holgersen for allowing us to reproduce here his map of the distribution of the Siberian Thrush which

originally appeared in *Stavanger Museums Arbok* 1953, p. 104. In spite of the remoteness of its breeding grounds, this species has been recorded in most European countries and its appearance in Britain is not therefore very surprising.

[The Siberian Thrush may now certainly be regarded as a British bird, but this is not the first occasion on which the question of its occurrence in this country has been raised. Two previous records, neither of which has received universal recognition, are mentioned in various published works, including *The Handbook* (Vol. II, p. 141). Their rejection seems to date from the time of Howard Saunders who said in the revised (1899) edition of his *An Illustrated Manual of British Birds*:

"An example of the Siberian Thrush (*T. sibiricus*, Pallas), said to have been shot in Surrey in the winter of 1860-61, and originally supposed to be a melanism of the Redwing, was in the collection of the late Mr. F. Bond, who bequeathed it to the British Museum; while I fully believe that another was picked up exhausted at Bonchurch, I of Wight, in the winter of 1874; but the evidence is as yet not sufficient to warrant the introduction of this species into the British list."

Substantially the same account appeared in the 1st edition (1889). The second part of this statement has been much quoted, usually without comment, and in this way it appears in *The Birds of Hampshire and the Isle of Wight* (1905) by J. A. Kelsall and P. W. Munn, but we have been able to trace no further evidence and the record can therefore at this time be safely ignored. The Surrey bird, on the other hand, has a wealth of supporting information as the following account from J. A. Bucknill's *Birds of Surrey* (1900), pp. 15-16, shows:

"The only example of this Asiatic species which has been definitely recorded in this country up till March, 1899 (though Mr. Howard Saunders, in his *Manual of British Birds*, p. 12, mentions another possible example from the Isle of Wight, 1874) is a bird which is said (fide Mr. Harting, who was told by Mr. Bond) to have been shot in Surrey between Guildford and Godalming in the winter of 1860-61. It was sold to, and was for many years in the collection of, the late Mr. Frederick Bond (perhaps the best known and most popular collector of the century) by a dealer. Mr. Bond and others considered it to be merely a melanism or dark variety of the redwing, and Mr. Edward Blyth (whose technical and practical Eastern experience was very great) was the first to identify it as being a Siberian thrush. He mentioned it incidentally, in a note on the various rare thrushes which had occurred in this country, in *The Field*, September 24, 1870, p. 277, and since that date it has been generally accepted as a more or less



From U.S. National Audubon Society

Patricia Bailey Witherspoon

MALE WILSON'S PHALAROPE (*Phalaropus tricolor*) AT THE NEST

As in other phalaropes, the male (which alone incubates) is less strikingly marked than the female, lacking the pale crown, nape and back (*cf.* plate 2); the stripe through the eye is less black and the band down the side of the neck less bright. As clearly shown here, this species in contrast to the other phalaropes lacks any white in the wing and the colours of the upper-parts are more uniform with the absence of streaking (*cf.* plate 3). The head is small and the bill long. (See page 30).



From U. S. National Audubon Society

Allen D. Cruickshank

FEMALE WILSON'S PHALAROPUS (*Phalaropus tricolor*) IN BREEDING PLUMAGE

In this plumage the female is most striking and the pattern is well indicated here. Particularly conspicuous are the bluish-grey crown and whitish nape (darkening into grey down the middle of the back) contrasting with the black strip through the eye which broadens into the rich chestnut band down the side of the neck and back. There is a white superciliary line and the under-parts are whitish except for



G. K. Yeates

RED-NECKED PHALAROPE (*Phalaropus lobatus*) AT THE NEST

This affords a useful comparison with the photographs of Wilson's Phalarope (plates 1 and 2) and shows the different build and far less uniformly coloured upper-parts of the Red-necked. This, the smallest and most dainty of the phalaropes, is a more compact bird than Wilson's, less drawn-out and with a shorter neck; the bill though line is shorter in proportion to the head. Note the white in the wing, the whitish stripes down the sides of the back and the less uniform, buff-streaked upper-parts.



From U.S. National Audubon Society

Ralph S. Palmer

SOOTY SANDPIPER (*Micropodana himantopus*) ON THE NEST

Two of the most distinctive characters of this dark-winged, pale-rumped species are the bill and, in the breeding-season, the heavy cross-barring on the under-parts from breast to tail; only part of the latter can be seen here, but the long, heavy, tapering bill with the noticeable dip at the end is well shown. Note the broad supercilary stripe and also the black-brown, light-edged feathers of the mantle which become greyer in winter (cf. plate 5). In summer there is a patch of rust colour on the cheeks. (See page 32).



From U.S. National Audubon Society

K. H. Maslowski

STILT SANDPIPERS (*Micropalama himantopus*) IN WINTER PLUMAGE

In this plumage the bird is much paler, greyish instead of black-brown on the mantle, and whitish below. The rust on the cheeks has disappeared and so has all the heavy barring, only the streaks on the throat and upper breast being left (cf. plate 4). Note the pale supercilary line which is a useful character, also the distinctive, bent-tipped bill and the rather thick-necked appearance. The bird on the left shows the upright stance, but the full length of the legs cannot be appreciated. (see page 32).



R. P. Bannall Oakleigh

SHORT-TOED LARKS (*Calandrella brachydactyla*) AT CLEY, NORFOLK,
16TH SEPTEMBER 1951

In the upper, the further bird (the adult) shows the dark shoulder-patch and light eye stripe; the former is often not seen in the field, being hidden as the bird crouches. In the lower, the spotted breast band of the immature (darker where the adult has the black patch) is clearly seen and can be compared with the light, almost unbroken breast of the adult behind (this is the best distinction from the Lesser Short-toed, *C. impexans*); the adult here also shows the way in which the pale eye stripes extend round the forehead. (see page 36).



D. G. Andrew

SIBERIAN THRUSH (*Turdus sibiricus*) ON THE ISLE OF MAY,
1ST-4TH OCTOBER 1954

The upper photograph clearly illustrates the slate-black plumage, the white stripe over the eye and the broad off-white tips to the inner webs of the outer tail-feathers (one has been turned out of position to show this); an indication of the white tips on all but the central tail-feathers can also be seen. This bird had an elongated upper mandible and this is just visible. In the lower photograph, the remarkable pattern on the underwing, rather like that of White's Thrush (*Turdus dauma*), is shown. (See page 21).



Guy Mountfort

1st-WINTER YELLOW-HEADED WAGTAIL (*Motacilla citreola*) ON FAIR ISLE,
20th-25th SEPTEMBER 1951

The upper shows the striking pattern on the wing: clear white margins to the inner secondaries, and broad white tips to the greater and median coverts forming a prominent double wing-bar. In the lower, the white wedges on the basal halves of the 5th to 10th primaries and all the secondaries are clearly seen, also the white eye-stripe and some indication of the forehead lighter than the crown; the depth of grey on the flanks is not well illustrated, however. (see page 26)

genuine example, Yarrell (*B.B.*, 4th-ed., vol. 1, p. 279 note), in particular stating that there seems to be no reason why the account should be disbelieved. [This was of course written by Newton.—Eds.].

Mr. Gould, who figures the specimen in his *Birds of Great Britain*, vol. 2, states that it was a female and was shot by a Mr. Drewitt at St. Catherine's Hill, near Guildford, in the beginning of February, 1855, during the Crimean War.

There is some discrepancy between the two accounts, but I think Mr. Gould's is probably correct, and, with the exception of the date, is not incompatible with the remainder of the other story.

This identical specimen is now in the National Collection at the South Kensington Natural History Museum.

Although the occurrence is not wholly free from doubt, it has been so generally accepted that I have no other option than to include it in the present volume. It may also be mentioned in support of its claims that it has occurred without question so near this country as Germany, Belgium, and France, so that its accidental appearance in England and in Surrey is not entirely improbable".

The only additional information available that we have found is the statement by J. H. Gurney (*Trans. Norfolk Nat. Soc.*, Vol. IV, p. 629) that Bond obtained the bird from "Mr. Smither of Farnham in Surrey, near which place it is believed to have been killed by a Mr. Drewett in February 1885 [*sic*, presumably a misprint for 1855]. Smither was a retired gamekeeper, and Gould gives him a high character in his article on the Dartford Warbler". [He was not therefore a dealer in the ordinary sense.]

The main reason for doubting the validity of this record, where there is no question of the identification being wrong and where there is little likelihood of fraud since the bird was first regarded as a Redwing, appears to be the slight discrepancy over the dates. However, it seems obvious that the 1855 one is correct. Gould would not gratuitously mention the Crimean War if the event had actually occurred later and Gurney (allowing for an obvious misprint) supports him. It seems probable that the 1860-61 winter was the date when Bond acquired the bird from Smither, not that in which it was shot.—Eds.]

TWO YELLOW-HEADED WAGTAILS AT FAIR ISLE: A NEW BRITISH BIRD

By KENNETH WILLIAMSON

(Fair Isle Bird Observatory)

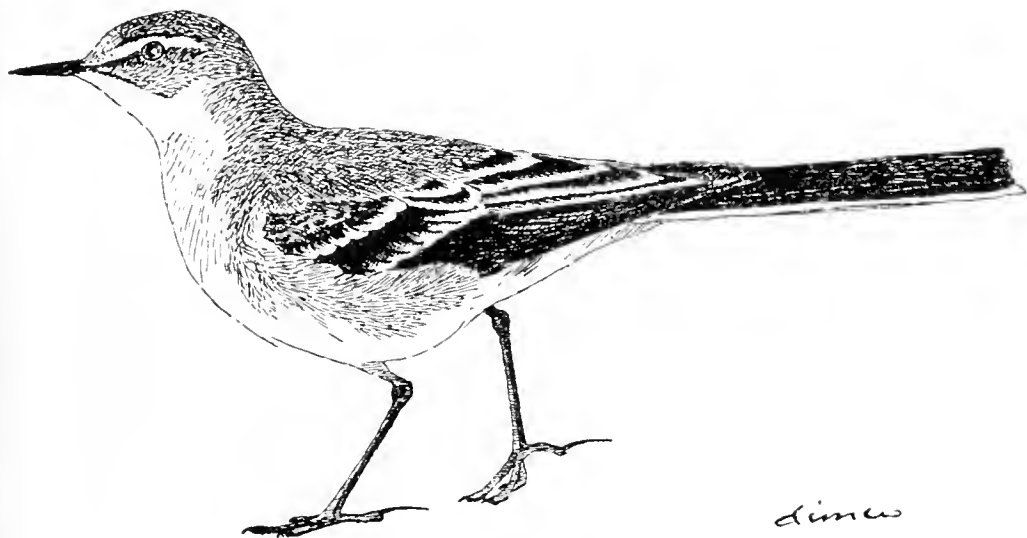
Two 1st-winter examples of the Yellow-headed Wagtail (*Motacilla citreola*), a Siberian species not previously recorded in the British Isles, were captured at Fair Isle on 20th September and 1st October 1954.

The first, ringed B 88594, was caught in the Gully Trap at 1745 hours and was examined in the laboratory in a failing light by H. G. Alexander, Miss M. Haydock, H. Mayer-Gross, Mrs. A. W. Thom, Miss V. Thom and myself. It appeared to be a young *flava* wagtail, but atypical in that the mantle was apparently pure grey. However, the light was so poor that I decided to postpone a detailed examination until the following day, so the bird was put into one of the roosting-boxes in the laboratory.

Next morning the impression gained the previous evening was confirmed: the mantle was altogether too grey for *M. f. flava* or the British *flavissima*, and this and other features of the plumage suggested *M. citreola*. Since the comparable plumage of the Grey-headed Wagtail (*M. f. thunbergi*) is not described in *The Handbook*, this identification could only be regarded as provisional, despite the general agreement of our bird with descriptions of 1st-winter *citreola* in Hartert (1910), Dresser (1871-81) and Gätke (1895). A detailed note on the plumage (see below) was made after the bird had been re-weighed, and it was then released.

It was not seen again on the 21st, but early on September 22nd H. G. Alexander found it on Buness, within 200 yards of the Observatory, and was able to study it closely in the field. He later told me, "Had I seen the bird in India, I should have had no hesitation in calling it *citreola*." Later, returning disconsolate from an hour's fruitless quest on Buness, I found the bird feeding on the grass immediately behind the laboratory. I had it under observation in bright sunlight, at a range of down to 20 yards, for a long time, and wrote down: "*Flava* wagtail from in front, *alba* wagtail from behind. The blue-grey of back uniform and pure, contrasting with darker rump and black tail-feathers. The bird often carried the wing-tips below the level of the tail, showing the rump well. More sedate than an *alba* wagtail, with less tail-flicking and head-movement. Considerable white showed in the outer tail-feathers and secondary wing-feathers; the tips of greater and median wing-coverts made a striking double white wing-bar. The breast was distinctly buff and a buffish wash was noticeable on face and superciliary stripe. The fore-part of the

crown and forehead appeared brownish. There was a noticeable grey wash along the sides of the underparts from breast to flanks."



YELLOW-HEADED WAGTAIL (*Motacilla citreola*), IN FIRST WINTER PLUMAGE, AT FAIR ISLE, 20TH-25TH SEPTEMBER 1954

(Drawn by D. I. M. Wallace)

That night a new party arrived on "The Good Shepherd", consisting of W. Conn, W. J. Eggeling, I. J. Ferguson-Lees, G. Mountfort, D. I. M. Wallace and W. J. Wallace. They were all out searching for the bird early next morning, but were unable to find it because one of the hostel staff had caught it in the Observatory "Heligoland" and put it in the laboratory pending my return from the traps! All were able to examine the bird, and after it had been photographed (plate 8) by Guy Mountfort it was set free. It was seen on several occasions later that day and on the 24th, and the excellent sketch reproduced here was made by D. I. M. Wallace.

The laboratory description which had been taken down on the 21st was discussed and slightly modified, so that there was unanimity of opinion on exact shades of colour, at the evening conference on the 24th. The revised version reads as follows:

Nape and mantle slate-grey with a few warm brown feathers remaining from the juvenile plumage. Upper tail-coverts blackish. Crown and forehead grey tinged brownish, becoming yellowish-brown above the bill. Short black streak above the superciliary stripe, and a thin black malar stripe from gape to ear-coverts. The long white superciliary stripe was broadest behind the eye, and tinged with buff above the eye. Chin white, ear-coverts greyish flecked with white. Breast pale buff with greyish markings especially at the sides of neck. Belly whitish with a faint yellowish-buff wash, vent and under tail-coverts white. Sides of breast down to flanks greyish with a few warm brown feathers. Tail black, the outermost pair of feathers white, the penultimate pair with long white wedges. (The tail

showed irregular moult). Wing-feathers brownish-black with clear white margins to inner secondaries and broad white tips to median and greater coverts, these forming a prominent double wing-bar. Legs blackish-brown, bill blackish, gape orange-yellow with pink centre, iris brownish-black.

Structural details are given in Table I. It was noted that the hind claw was straighter than in specimens of *M. flava* (including *thunbergi*) kept in the laboratory. When captured on 20th the bird's weight was 18.09 gm., and this had dropped to 16.76 gm. at 0540 hours on the 21st. When re-captured at 0700 hours on 23rd it showed a good gain to 18.78 gm.

The second bird was first seen on the afternoon of 1st October feeding on a beach at the south end of the isle, and occasionally hawking flies above the wrack. The observers who gathered to watch it were H. A. Craw, W. Craw, W. J. Eggeling, I. J. Ferguson-Lees and myself. As we tried to get closer views the bird left the shore for a grassy field behind, and very soon flew to a marshy area beyond. This ground seemed much to its liking, and on a number of occasions when we disturbed it the bird took shelter in drainage ditches, remaining in them to continue feeding. As there seemed a good chance of catching it in one or other of these ditches the Yeoman apparatus was erected over the deepest drain, and within a few minutes we had walked the bird into the trap.

The chief differences from wagtail B 88594 were a less strongly marked superciliary stripe, a suggestion of greenish-brown in the mantle, and a less pure grey wash on sides of breast and belly. The plumage of upper- and under-parts was not so contrasting in the field, and the eye-stripe was only obvious at a moderate distance as a pale mark behind the eye. The bird's manner when on open ground was very similar, and again we had the impression that there was less movement of the tail than with other wagtails. The following description was made in the laboratory.

Mantle grey, but with a greenish-brown wash. Rump purer grey, and upper tail-coverts blackish edged with grey. Central tail-feathers black with a faint brownish tinge. Outer tail-feathers mostly white and penultimate pair with a broad white wedge extending to about half-way down the inner web. Head and nape as mantle, former becoming more brownish-olive towards the forehead. Ill-defined buffish superciliary stripe, narrow and incomplete in front of the eye, not reaching the base of the bill, and broader but short behind the eye. Lores greyish-white, ear-coverts grey with blackish streaks, and bordered posteriorly with whitish feathers extending downwards in the form of an ill-defined half-collar to meet the white chin. Breast pale buff with a pectoral band of grey clouding. Belly and under tail-coverts white, vent suffused with pale buff. Flanks greyish, washed at sides of breast with some buff. Distinct double wing-bar formed by prominent white tips to the median and greater coverts; outer edges of greater coverts brownish-white, and edges of the white-tipped inner secondaries also whitish.

When the underwing was examined it was seen that the basal half of the 5th to 10th primaries and all the secondaries had a

white wedge extending from the base to approximately half the length of each feather. This feature was not apparent from above, and unfortunately it was overlooked in examination of the first bird, although it is well shown in the photograph (plate 8, lower). Measurements and wing-formula are given in the table, under its ring-number B 88633. Its weight was only 15.35 gm.

From each of these birds a single flat-fly was taken during examination with chloroform vapour for ectoparasites. Gordon Corbet has kindly confirmed the identity of these flies as ♂♂ *Ornithomyia fringillina* Curt. and reports that both specimens show abnormality in the form of the large thoracic bristles. B 88633 was also seen by K. Allsop and J. Chillingworth, the last occasion being on 5th October.

The call-note, often heard, struck us as being different from that of the *flava* wagtails: there was general agreement that it was a slurred monosyllabic note best expressed as a high-pitched "sweep".

TABLE I—STRUCTURAL DETAILS OF YELLOW-HEADED WAGTAILS (*Motacilla citreola*) TRAPPED AT FAIR ISLE.

Character	B 88594	B 88633
Measurements in mm.		
Chord of wing	85	80
Bill from skull	16.5	15
Tarsus	27	26
Tail	82	78
Hind claw	11	11
" " with toe	20	20
Wing-formula		
Longest primary	2nd and 3rd	2nd
3rd shorter by	—	0.5
4th " "	1	0.5
5th " "	3	3.5
6th " "	12	11
7th " "	17	15
Emargination on	3rd, 4th, 5th	3rd, 4th, 5th

By arrangement H. G. Alexander, I. J. Ferguson-Lees, Guy Mountfort and myself met at the Bird Room of the British Museum (Natural History) on 26th November and, after a careful examination of skins of 1st-winter *M. citreola* and *M. f. thunbergi*, were unanimous in the conclusion that the Fair Isle birds were referable to the former species. A note on the differences between these two rather similar wagtails will be appearing in a future number of *British Birds*.

SOME PHOTOGRAPHIC STUDIES OF WILSON'S PHALAROPE AND STILT SANDPIPER

Photographed by ALLAN D. CRUICKSHANK, K. H. MASLOWSKI,

RALPH S. PALMER and PATRICIA BAILEY WITHERSPOON

(Plates 1-2 and 4-5)

IN August/September 1954, apart from several Lesser Yellowlegs (*Tringa flavipes*) and the now annual sprinkling of Pectoral Sandpipers (*Calidris melanotos*)—details of which we hope to publish shortly—the American waders occurring in Britain included two which were not previously on the British list: a Wilson's Phalarope (*Phalaropus tricolor*) near Rosyth, Edinburgh, and a Stilt Sandpiper (*Micropalama himantopus*) near Spurn, Yorkshire (see pages 15-17, 18-20). We have been fortunate enough to obtain from the United States National Audubon Society two photographs of each of these species and they serve well to illustrate some of the more important characters.

As is the case with phalaropes, the female Wilson's is bigger and more brightly coloured than the male and the differences are perhaps more exaggerated than in the only two other species, both of which are well enough known in the British Isles. Wilson's is the largest of the three, the female being about the size of a Reeve (*Philomachus pugnax*). The species has in proportion a longer bill, longer neck and longer legs, while the toes are less lobed and the feet only slightly webbed at the base. Some indication of the differences in build between this species and the British-breeding Red-necked Phalarope (*Phalaropus lobatus*) can be obtained by comparing plates 1 and 2 with G. K. Yeates's photograph (plate 3) of the latter bird at the nest. Photographs of the Grey Phalarope (*Ph. fulicarius*) at the nest, with its noticeably shorter, thicker bill and conspicuously streaked back, were published in *British Birds* four years ago (*antea*, vol. xlv, plates 33-35). In summer plumage the adult female Wilson's Phalarope has a bluish-grey crown which lightens into whitish on the nape and then shades again into grey in the middle of the back; separated from the crown by a white superciliary line, there is through the eye a black stripe which broadens into a dark chestnut-brown band down the side of the neck and along the back. This pattern is well illustrated in plate 2, and a comparison with plate 1, which shows the male at the nest, will give some indication of the differences between the sexes. The male is less strikingly marked and duller, for he lacks the pale crown, nape and back, while the stripe through the eye is less black and the broad band

down the side of the neck is less bright and has just a wash of cinnamon to it. In both sexes the wings are brownish-grey and—an important point—lack the white bar present in the two other species of phalarope (*cf.* plate 3). The lower back is grey, lightening into white on the upper tail-coverts, while the tail itself is grey with whitish tips on the outer feathers. The colours of the upper-parts are thus comparatively uniform shades and there is less of the scaled and streaked effects found in the Grey and Red-necked Phalaropes (*cf.* plate 3 and also vol. xlv, plates 33-35). The under-parts are whitish except for a pale red colour on the throat and upper breast, more noticeable in the female (the extent of this is also well shown in plate 2). At all seasons the legs are yellow or greenish-yellow.

In winter plumage Wilson's Phalarope is pure white below, and above pale grey except for white rump and tail-coverts. It is in the field a very pale-looking bird with a strikingly white breast, and by this impression alone it is possible to pick it out at a great distance from most other waders with which it is associating; this was very noticeable at Rosyth. In winter plumage the slender, needle-like bill and the small head (plate 2) plus the absence of white in the wings and the generally pale colour with the unstreaked breast are the most useful field-characters.

Wilson's is primarily a marsh and shore bird, seldom if ever being found on the open sea like the other phalaropes. Even then, more time is spent walking on marshy ground or wading in shallow water (as in plate 2) than actually swimming and in this way it behaves more like the Lesser Yellowlegs with which it often associates on passage in America. Its food consists mainly of insects with certain other aquatic animals and the seeds of water plants. It will wade about in the shallows with whole head and neck buried in the water, tail up in the air; restless and energetic, it is always on the move as it feeds. It has the phalarope habit of spinning, but this species whirls round and round not only on the water but also on the damp ground near by. This latter is a most remarkable sight which the writer was fortunate enough to witness when he saw the bird at Rosyth on 20th September. A. C. Bent (*Life Histories of North American Shore Birds*, Part I, p. 33) quotes an observation by W. L. Dawson of a Wilson's Phalarope which was seen to spin round 247 times in one spot without stopping save for lightning dabs at prey.

Like the other phalaropes Wilson's is a northern-nesting species, but at the same time its breeding range extends much further south; it is found from the south Canadian prairies, south to Nebraska, Iowa and N.W. Indiana, rarely further east (R. T. Peterson, *A Field-Guide to the Birds*). According to the account given by Bent (*op. cit.*, p. 30), the nest is well-concealed in grass, often in marshy ground, and is a hollow lined to a varying extent with grass. There are usually four eggs, buff in

ground-colour and heavily marked with blotches of blackish-brown (see plate 1). As in other phalaropes the incubation is by the male alone. The species winters in south America.

Another northern-nesting species, breeding in Canada chiefly from Alaska to Mackenzie, and likewise wintering in South America, the Stilt Sandpiper also frequently associates with Lesser Yellowlegs on passage. On the east coast of the United States it is, like the Wilson's Phalarope, most frequently seen in the region of the Mississippi Valley. There, apart from the fact that the two species are of the same order of size, the similarity ends. The Stilt Sandpiper is a slow-moving bird on the ground, not dashing over a large area like the energetic Wilson's or the nervously bobbing Yellowlegs, but feeding quietly and sedately in a small area rather after the manner of a Curlew (*Numenius arquata*). It has also something of the upright stance of a (very small) Curlew with its rather thick neck held straight and bill at right angles to it (see plate 5). The Stilt Sandpiper has, as its name would imply, long legs in proportion to many waders, though this is not completely brought out in plate 5, and thus the bird stands higher off the ground, but they are shorter than those of the Lesser Yellowlegs and in flight do not extend so far beyond the tail; they are normally dull olive-green in colour, occasionally yellowish. The bill is a useful field-character, being proportionately longer and heavier than those of most comparable waders and having a slight but noticeable drop at the tip; this is clearly shown in plates 4 and 5. The bird feeds chiefly by probing with the bill up to the base in the wet sand and mud, using a "rapid, perpendicular chopping motion" (Peterson, *op. cit.*), often in shallow water so that the head is below the surface. From the accounts quoted by Bent (*op. cit.*, p. 125), the majority of its food is animal matter, particularly bloodworms, but with a fair proportion of aquatic seeds. Out of the breeding-season Stilt Sandpipers tend to pack close together on the ground rather after the manner of Knots (*Calidris canutus*).

In breeding-plumage the Stilt Sandpiper is a predominantly brown bird with a sealed effect on the mantle and back produced by light edges to black-brown feathers. There is a broad, light stripe over the eye and a dark mark in front of it (this pattern is well shown in plates 4 and 5). Behind and below the eye there is a noticeable rust-coloured patch. The lower rump and upper tail-coverts are white with brown markings and the tail is grey-brown at the centre, lighter at the edge (plate 4). Below, the throat is well streaked and the upper breast more spotted; these marks give way to heavy barring from the lower breast to the under tail-coverts which makes the bird quite unmistakable (plate 4 shows the striations and spots, and the heavy barring to some extent). In winter the general effect is much greyer; the feathers of the upper-parts are brownish-grey with narrow, light edges;

the sides of the head are paler and there is no rusty tinge anywhere; the dark streak through the eye and the broad, white stripe over it remain, the latter being very conspicuous; the under-parts are white and all or almost all of the barring disappears, though the throat and breast are still streaked to some extent. A good impression of this plumage can be got from plate 4, and a comparison with plate 5 will show the difference in the amount of marking below. In winter when the darkly barred under-parts are absent, the Stilt Sandpiper in flight resembles a small Lesser Yellowlegs, as indeed does the Wilson's Phalarope—in both cases because of the plain wings and the white rump.

The nest-site of the Stilt Sandpiper (plate 4) is a depression in the ground lined with leaves and grass (see Bent, *op. cit.*, p. 123); usually four eggs are laid and these are yellowish-buff with brown blotches and spots.

I.J.F.-L.

NOTES

Wood Sandpipers displaying afloat.—While watching waders at a water-hole near Nanyuki, Kenya, B.E.A., around 1900 hours (local time) on 29th January, 1953, I observed an interesting display between two Wood Sandpipers (*Tringa glareola*). The actual display was not so remarkable as the fact that both participants were for most of the time completely afloat.

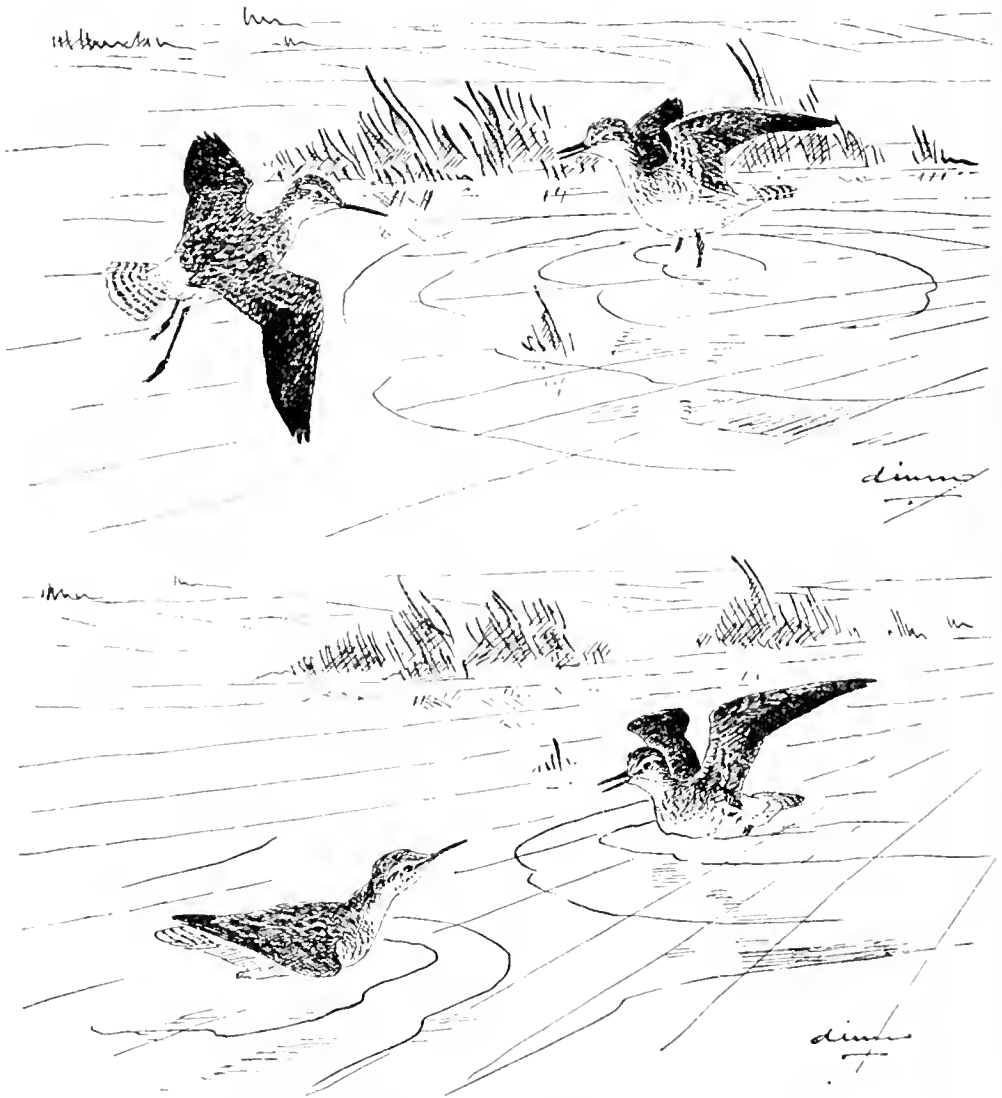
I had been watching a single bird (A) for some time, feeding in about three inches of water from a submerged tuft of grass. It was taking insects from the water and behaved quite normally until a second bird (B) got up from the grass near-by and made as if to land beside it. As B rose slightly prior to landing, A moved forward into deeper water and started to display, flicking half-opened wings, "bobbing" its head and uttering a short piping note repeatedly (Fig. 1). B then landed in the water in front of A and reacted by slightly opening its wings and pointing its bill at A. A became more excited and swam at B with wings fully raised and quivering and uttering higher pitched notes (Fig. 2). B then turned away and swam buoyantly down a channel of water for some way. Its resemblance to a phalarope was further heightened by the fact that it took several insects from the water as it swam past. A lifted from the water and settled in some shallows near-by. After a short time B flew off to preen by the side of the water-hole.

Earlier in the evening there had been much aerial chasing between the fifteen or so Wood Sandpipers feeding in the area, but no display had been noted on the ground.

The level of the water-hole had been steadily rising during the day and the area in which the birds could feed normally was con-

siderably diminished. A's aggressive display may well have been brought about by a desire to maintain a suitable feeding-ground.

D. I. M. WALLACE



WOOD SANDPIPERS (*Tringa glareola*) DISPLAYING ALOFT

(Drawn by D. I. M. Wallace)

In the upper sketch the left hand bird (B) is rising slightly before landing; A is moving forward and starting to display. In the lower both birds are completely aloft; A, on the right, is swimming at B with wings raised.

Display of Spotted Redshank.—On 29th April 1954 at the edge of a muddy, reed-fringed lagoon at Farlington Marshes, Hampshire, I witnessed what appeared to be an aerial display of the Spotted Redshank (*Tringa erythropus*). The bird, which was in full breeding plumage, was at a height of 50-70 feet, and called normally. It then plunged downwards rather like a drumming

Snipe (*Capella gallinago*), but with more opened wings, and at not quite so steep an angle, uttering a song made up of a rapid trill of the note "chu-whit" or "tchu-et" quickly repeated. It came no lower than 20 feet from the ground, then climbed again and flew off towards the mud-flats calling normally.

The Handbook gives a song which seems to be a more drawn out or slower version of the above, but states that no special form of flight accompanies the song. G. H. REES

Notes on two Kingfishers displaying.—While we were watching waders on the River Erme, S. Devon, on 20th September 1952, our attention was attracted by a pair of Kingfishers (*Alcedo atthis*) perched on the mud near the water's edge. They were sitting near each other in a manner which reminded us of penguins. They were obviously displaying, and after just over half-an-hour we had collected the notes which follow.

The two birds sat never more than about three feet apart, and on at least one occasion side by side (P. J. D.). The display actions were easily divided into eight groups:

i. a frequent and simultaneous changing of positions, the two birds passing very close to each other as they crossed.

ii. a slow bowing down, keeping the body and head in a straight line, then regaining the original upright stance; all in slow motion.

iii. a very forward bow with half-open bill; on a number of occasions the bill appeared to touch the ground.

iv. a fanning of the wings with the body in a crouch position—similar to the display of a male Blue Tit (*Parus cæruleus*) (P.F.G.); this action was done not directly facing the other bird, as if the object was to reveal the blue sheen of the feathers on the back and rump.

v. a spreading, or more often flicking, of the wings—*cf.* Spotted Flycatcher (*Muscicapa striata*)—a movement stimulated by some action on the part of the other bird; it appeared to be a threat.

vi. an occasional sandpiper-like bobbing of the tail.

vii. an upward stretching of the neck, and pointing of the bill; done in a slow and exaggerated manner.

viii. on one occasion the birds came close together, faced each other and then touched bills; also done in slow motion (P. J. D.).

On at least two occasions both birds got very excited, and began calling a loud, rapid "shrit-it-it-it-it".

Although a constant movement of waders was passing close by, only once did anything upset them, and that was when a Green-shank (*Tringa nebularia*) ran past. No notice whatever was taken of an Oystercatcher (*Hæmatopus ostralegus*) preening a few feet away.

After about 25 minutes of continual display they became very

quiet and for some minutes simply sat still facing each other; then suddenly both flew off together upstream.

Both birds appeared mature. As no other Kingfisher was present and because they flew off together we think the birds were a male and a female.

P. F. GOODFELLOW AND P. J. DARE

Pose iii)



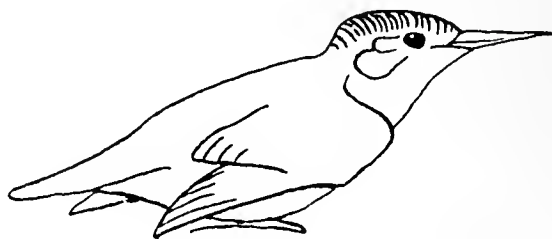
Pose v)



Pose vii)



Pose iv)



P. Goodfellow

FOUR OF THE POSTURES NOTED IN DISPLAYING KINGFISHERS (*Alcedo atthis*)
BY THE RIVER ERME, SOUTH DEVON, 20TH SEPTEMBER 1952

(Drawn from field-sketches by P. F. Goodfellow)

Short-toed Larks in Norfolk.—On 16th September 1954, at Cley, Norfolk, while in a photographic hide facing a series of shallow pools with dry grassy patches between them, I observed two small

larks for almost five hours at ranges varying from 100 to 12 feet. After making very careful notes of their characteristics, I identified the birds as Short-toed Larks (*Calandrella brachydactyla*), one immature and one adult. Several black-and-white photographs were taken and two of these are reproduced on plate 6; in addition some 60 feet of colour film were exposed.

In size and general movements they resembled Lapland Buntings (*Calcarius lapponicus*). They crept mouse-like amongst the grass, never hopping up onto prominent lumps in the manner of Skylarks (*Alauda arvensis*), several of which were always feeding in the same area though the Short-toed Larks consistently avoided them. Only one type of call was heard—a sparrow-like “cheep”—used when one of the birds flew over damp patches from one dry area to another. In colour they were richer brown than Skylarks on the back, wing coverts and tail, though not noticeably lighter. A pale sandy-brown band crossed the upper breast and was clearly speckled at the sides in one bird (the immature). Both had very light pale cream under-parts, which looked white in the sunlight when they were preening. The tail was short—as short as that of a Woodlark (*Lullula arborea*)—with a richer brown showing down the centre. The outer tail-feathers appeared to be cream-coloured and during preening some of the same colour showed on the outer webs of the adjacent feathers. Both birds had very marked pale eye-stripes which extended round the forehead to give the appearance of a cream band above the base of the upper mandible. The ear-coverts were chestnut, richer and unspeckled in the adult bird, though in both the eye-stripe broadened and curved round behind these coverts to join the pale throat. No crest was seen, even when the feathers of the crown were raised in preening. The beaks, especially in the adult bird, were heavier than those of Skylarks or Woodlarks and more reminiscent of those of buntings. These were grey-brown in colour with a yellow-green line at the junction of the mandibles. The legs were flesh-coloured, but no detail of the feet could be observed. Dark patches at the sides of the upper-breast were visible in one bird (the adult), but only on the few occasions when the head was stretched up (see plate 6, upper), while in the other the streaking in this position was noticeably darker.

On my leaving the hide, the birds which had crouched, were flushed, when the “cheep” call was again heard and a very short low flight made by both birds together before diving into grassy cover. This was repeated three times.

One of the birds, the adult, was seen on one of three following days by Mr. and Mrs. D. A. T. Morgan, L. G. Holloway, Miss James, Miss Forster, W. F. Bishop and others. On 13th September, three days before I saw these birds, A. H. Daukes had heard and seen a small, strange lark singing in the same area. His description of the song was “almost interminable, less musical

than that of Skylark or Woodlark, with certain phrases repeated almost *ad nauseam*". He listened to the unbroken song for twenty minutes before moving away with the bird still singing.

R. P. BAGNALL-OAKELEY

[At our request Mr. Daukes has amplified his description of the song he heard on 13th September. He says that it was quite distinct from a Skylark's (one or two of which were singing nearby), being without any of the canary-like trills uttered by that species and being altogether simpler, much inferior and less loud. While singing, the bird, which appeared to be about the size of a Woodlark, seemed to rise and fall "rather like a spider suspended from its silken thread." This description fits well the characteristic song-flight of the Short-toed Lark.—Eds.]

SPECIAL REVIEW

Lack on the Natural Regulation of Animal Numbers*

By E. M. NICHOLSON

DR. LACK begins this comprehensive review of a rapidly expanding subject with a chapter on the comparative stability of populations, starting from the 1928 *British Birds* Census of heronries and its subsequent annual follow-up. The poverty of data and free scope for argument and speculation which existed at that period have, under the stimulus of an organised and sustained drive, gradually given place to a fairly substantial mass of still fragmentary scraps and blocks of information, which it has become necessary to sort through and assess in order to show where we are getting to, to define the most important gaps and inconsistencies in knowledge, and to run up a revised but still provisional interpretation of the significance of what we have so far learnt. This heavy and exacting task has been most thoroughly and competently performed by the author, who has added to our indebtedness by very candidly reminding the reader when his personal views and interpretations either differ from those of others or go beyond the realm of what can yet be said to be fully established. Nevertheless there is an inherent danger that such an authoritative survey, ranging mainly over birds, but also discussing mammals, fish, insects and other animals (not forgetting man), may lead to premature and incomplete formulations becoming uncritically accepted by some of those who inevitably have to take on trust a great deal of the assessment of material (which is already far too voluminous to be quoted in the text). Dr. Lack, in claiming to be the first to attempt to cover this vast new field, clearly recognizes this danger, and the need for further researches which may bring about further changes in

* THE NATURAL REGULATION OF ANIMAL NUMBERS. By DAVID LACK, F.R.S. (Oxford University Press, London, 1954). 35s.

approach. Provided his warning is heeded we may look forward to ornithology continuing to play a leading part in the study of population for some time before the inevitable moment arrives when the creative phase is ended, and the dry-as-dust school can come into their own.

Comparison naturally arises with another recent Oxford book, Dr. N. Tinbergen's *The Study of Instinct* (reviewed *antea*, vol. xlv, p. 182). Perhaps inevitably the present work is less lively and less succinct, and its author seems less at home in his excursions beyond the ornithological field, where indeed the reader is left in some doubt whether the resulting unwieldiness is in this case adequately compensated by the wider perspective and the fruitfulness of the comparisons and contrasts thus made possible. On the other hand the wider canvas and more copious references add to the value of this book as a tool of study, as is emphasised by the fact that the titles of works cited occupy over 42 pages, apart from the excellent indexes of species names, authors and subjects. No one seriously interested in bird population can afford to be without *The Natural Regulation of Animal Numbers*.

The book's central theme is that as animals are capable of rapidly multiplying but actually fluctuate within relatively restricted limits density-dependent controls must be operating. Sizes of clutches, and numbers of broods are stated to be, on average, the largest for which the parents can find enough food. Variations in clutch-size are explained on the same lines but with recognition of modifying influences such as hatching and growth-rates, predation-rates and differing parental care. Exceptions are recognized, especially in ducks, which do not feed their young.

Few cases have so far been recorded in which bird fecundity varies with population density, and then not on a scale to influence subsequent numbers. The situation seems to differ among other animals. Losses of eggs and young vary according to nest site, from an average of about 55 per cent for open-nesting Passerines to about 33 per cent for hole-nesters, including users of nesting boxes. Adequate figures are, however, unavailable for many species, and the extent of mortality among young at the flying stage is unknown. Only about 8-18 per cent of eggs laid develop into adult birds. Among adults annual mortality rates so far recorded range between 40 and 72 per cent, except among waders, gulls, herons, penguins, albatrosses and Swifts, where lower rates are recorded, ranging down as low as 3 per cent in the Royal Albatross which, on the basis of a small sample, is credited with about 36 years' expectation of adult life. High reproductive rates and high mortality rates go together. At hatching the sexes are normally about equal, but later on there is often a majority of males.

Evidence for density-dependent mortality is reviewed, but unambiguous instances among wild bird populations are lacking. Illustrations are given of the seasonal, specific, regional and indi-

vidual variations in bird diet, and of the pitfalls in determining what it is and what it signifies. Food consumption daily in relation to total body-weight ranges from about 200 per cent in some hummingbirds to about 5-9 per cent in land-birds weighing between 100 and 1,000 grammes. Moreover, while small Passerines often die of starvation within 24 hours some raptors can go hungry for 3-4 weeks and breeding penguins for 6-8 weeks. While there is much indirect evidence of birds being most plentiful where their food is most abundant exact data on amounts taken in relation to amounts available are at our disposal in few instances.

While some of these figures suggest the possibility of birds acting as a controlling influence on numbers of insects or mammals, others point to the opposite. Fragmentary evidence for some Passerine and game species indicates, however, that losses as high as 6-8 per cent of total population per month can at times be inflicted on their prey by bird predators, and if this is confirmed predators are capable of becoming a controlling factor. The incidence of disease among wild birds is very imperfectly known, but except among such groups as ducks, game-birds, pigeons and gulls it seems unlikely to be an important factor in regulating numbers, and then probably only in crowded conditions.

Substantial changes in numbers and distribution due to climatic, human and other influences confirm the potentialities of rapid alterations in numbers where the normal regulation is by-passed, as in the example of the million-fold multiplication of some 120 Starlings introduced into N. America about sixty years ago. (It is regrettable to find Dr. Lack following the bad example of Mr. Fisher in extending the spread of the Collared Turtle Dove into "England in 1952" on the strength of a single individual which may easily have escaped from captivity near-by.) There are interesting and graphic diagrams, particularly that illustrating bird population turnover in Breckland pinewoods at successive ages of growth.

Cyclical fluctuations are critically discussed, the author's conclusion being that genuine ones with approximately regular peaks are much rarer than has sometimes been claimed, and that these cases are probably due to food shortage (with perhaps secondary disease) in the dominant rodents, the birds of prey and the fur-bearing carnivores, while in the gallinaceous birds and perhaps in the scarce rodents they are due to the greatly increased impact of predation on them when predators normally living on immense rodent populations find this food supply failing. Irruptions, or emigrations as Dr. Lack would prefer to call them, are examined and are attributed ultimately to food shortage, although the proximate stimulus to mass emigration is sometimes a behaviour response to high numbers before food shortage has made itself felt. Migration is briefly reviewed in relation to its influence on populations.

The final chapters deal with gregariousness, territory and dispersion, containing a moderate and balanced restatement of Dr. Lack's well-known views on the unimportance of territory in relation to population regulation and food supply, and a more interesting discussion of the problem of explaining how not only territorial but gregarious species contrive to distribute themselves in the breeding season so successfully in relation to the possibilities of getting food and rearing young. Only in the last two pages of his stimulating "Conclusion" does Dr. Lack touch very briefly on the important applied problems arising in human attempts to preserve, eliminate or "crop" wild animal populations. A book of such wide scope is difficult to criticize briefly, but something must be said on the aspects which are most important for field-ornithologists. Dr. Lack has done a real service in emphasizing throughout the efficiency of the mechanisms enabling birds to reproduce and distribute themselves roughly up to the limits of numbers permitted by readily available food resources, and to maintain themselves near those limits with remarkable consistency. Compared with many of the other animals referred to, birds are extremely efficient in these respects.

Dr. Lack's attempts to explain the nature and workings of the mechanism are, however, less satisfactory. He has a comparatively straightforward task in showing that clutch-size and number of broods reared do not vary enough or in a suitable manner to play any considerable part in regulating numbers, and that the necessary adjustment to make good heavy losses must therefore come from some change enabling a larger than normal proportion to survive and breed, until the losses have been overtaken. He seeks the explanation in an assumed substantial density-dependent difference in mortality, but the chapter dealing with the evidence for such a factor among wild birds out of the nest produces absolutely none, although it suggests that Errington's findings of the greater rate of *disappearance* of young Bob-whites at higher densities *may* possibly form such a case.

It seems difficult to swallow this main proposition that bird numbers are regulated by a force so powerful that it can hold every species close to a consistent population level, yet so unseen that it can still defy every single effort of world ornithology to detect any single unmistakable instance of its operation in nature. If we stick to the known facts we are not justified in inferring for most species that a higher rate of failure to join next season's breeding population on the area in question is necessarily equivalent to a higher rate of mortality on that area. Yet this is the assumption which the density-dependent mortality argument requires.

There are at least three explanations all of which are inherently likelier and more in accord with observation, and which may work separately or together. First, there may be a density-dependent tendency towards dispersal into less populous areas within the

range of the species. Secondly there may be a density-dependent tendency to emigrate right outside the range and to attempt colonisation of new areas, as in the mass irruptions of Pallas's Sandgrouse, Crossbills and other species. Or thirdly there may be a density-dependent tendency to remain within the area of origin as non-breeders. That many birds do each of these things is certain, and it is also clear that in all three cases birds so acting at high levels of density will make the same contribution to observed stability in the population of any given area as if they had been victims of density-dependent mortality. It is therefore astonishing to find that Dr. Lack gives hardly any attention to the possibility of density-dependence in the first and third of these, while in his excellent account of the second he seems almost to ignore its close relation to his thesis and to stress the somewhat remote benefits to the emigrants ("if they emigrate they have at least a chance of finding suitable feeding areas elsewhere"). Surely a much more important point is that such mass emigration in face of threatened famine leaves behind in the regular habitat a much reduced residue of population with a much increased chance of surviving and breeding successfully? What happens to the emigrants is biologically of incidental importance only: they are expendable.

It might be argued that indirectly any extra mortality arising in these ways is density-dependent in origin, but such an argument would be confusing the issue. Nature's "object" of regulating population on each area to food supply in that area can be (and undoubtedly often is) achieved by compelling surplus individuals to move elsewhere. Whether in doing so or after doing so they die, or live as non-breeders or breed successfully elsewhere is a secondary issue, although it is clearly of greater evolutionary value to a species if the surplus birds try to colonize a fresh area or a fresh ecological niche than if they just sit around awaiting the beneficent workings of density-dependent mortality. At several points an awareness of the full significance of this seems to be about to dawn on Dr. Lack, but each time, after a brief aside that there is such a thing as dispersion or movement, he returns hurriedly to the false trail.

This is not to deny that density-dependent mortality affects wild birds; very likely it does, especially in sedentary species. That it has anything like the importance assumed by Dr. Lack is however something that will take a lot of proving. Meanwhile it might be profitable to begin a serious study of the more obvious factors so far neglected, and it is to be hoped that this will be done.

BOOK REVIEWS

THE WATERFOWL OF THE WORLD. By JEAN DELACOUR.
Illustrated by PETER SCOTT. (*Country Life*, London, 1954).
Vol. I. 300 pages, 16 colour plates, 33 maps. £5. 5s.

INSULARITY in ornithology has received many hard knocks recently, but even for these times there is something breath-taking in the degree of cosmopolitanism assumed in this ambitious work by Mr. Delacour and his illustrator, Mr. Scott. Even a wide acquaintance with Northern Hemisphere forms of the Anatidæ will take one very little way with whistling ducks, steamer ducks and South American crested ducks, which share this first volume with the more familiar swans, true geese, brents, sheld ducks and their various anomalous relatives such as those here grouped as South American sheldgeese, not to mention the very distinct and remarkable Australian Magpie Goose.

It is one of Mr. Delacour's outstanding achievements that he arranges this varied and complex group of birds in a largely original and convincing classification, outlined in a scientific paper nine years ago but only now developed on the scale which it deserves. Apart from the unique Magpie Goose (with a sub-family to itself) only two other sub-families are recognised, the Anserinæ including the swans, geese and whistling ducks ("tree ducks"), and the Anatinæ including all other ducks and the sheldgeese and their allies. Only five species of swans are recognised, two of the three Northern Hemisphere forms being divided into New World and Old World subspecies. Of true geese only seven species are distinguished, but Bean Geese are divided into two groups, Forest and Tundra, of which the typical race falls into the first and our other wintering subspecies, the Pink-footed, into the second, the remaining four races being unrecorded in Britain.

As would be expected the taxonomy and the avicultural aspects are fully and authoritatively dealt with, but descriptions of general habits, display, food and reproduction are at times disappointingly brief. Distribution is clearly indicated with the aid of maps although some of the references to Great Britain sound a trifle odd; it is surely an overstatement to describe the Whooper Swan as breeding "in the northern parts of Scotland" without any mention of irregularity, while it seems going to the other extreme to say of the Grey Lag Goose "Breeds in Iceland, Scotland and the Hebrides (rarely now)" when the great bulk of the surviving genuinely wild stock in this country is Hebridean.

Mr. Scott's fifteen coloured plates representing adults and young of all the species and subspecies are done with his usual skill and are accompanied by simple and ingenious keys facing each of them. The colour reproduction is no more than fair in standard and at

times definitely inadequate, as when the Greenland White-fronted Goose is shown with hardly more yellow in the bill than a Greylag.

We look forward to the two subsequent volumes of what will undoubtedly be the standard work on its subject for many years to come.

E.M.N.

PASTURES NEW. By JEFFERY G. HARRISON (*Witherby*, London, 1954). 12s. 6d.

DR. HARRISON describes here in pleasant, easy manner some of his experiences, particularly as a wildfowler, while in north-west Germany on National Service with the Navy for two post-war years. The whole stretch of the German coastline from Holland to Denmark, comprising the Frisian Islands, with their hinterland of sands, mudflats, mainland marshes and estuaries, is shown as a vast area teeming with wildfowl and waders in their season. On passage, and in suitable weather in winter, thrilling spectacles are provided—for example, fully 200 Smew of which 90% were old drakes; occasionally up to 10,000 Pink-footed Geese on one marsh; 8000 White-fronts in the air together; 10,000 Wigeon sheltering in a bay; hundreds upon hundreds of Oystercatchers, countless thousands of smaller waders. Figures such as these occur dotted about throughout the book, which is however not restricted to wildfowl. Passerines also pass through this area in great numbers, and Dr. Harrison has included some interesting tables based on observations on 25,000 migrants at the mouth of the Elbe. He finds that overland migrants prefer light tail-winds to head-winds, but do not like strong tail-winds; when it comes to facing a water crossing, on the other hand, head-winds are preferred; furthermore, with a tail-wind, the larger the species the more likely it is to make the water crossing, the smaller birds stopping or turning aside.

The book is illustrated with a number of photographs and the author's own drawings.

P.A.D.H.

LES OISEAUX D'EAU DE BELGIQUE. By LEON LIPPENS.

(*Vercruysse-Vanhove*, Bruges, Belgium, 2nd edition, 1954).

ONLY twenty-five years ago there were virtually no Belgian ornithological records other than those of birds killed. The book bearing this title was originally published 13 years ago, about the time when, it seems, the age-long taking of migrants on spring passage through Belgium was coming to an end, ornithological interest was spreading from sportsmen to the broader basis of a body of "naturalists, ornithologists, observers, photographers, amateurs", and laws giving some species protection throughout the year were gaining the support of public opinion.

The effect of all this is seen in the edition now under review, which has been revised and largely re-written up to and including the 1954 breeding-season, thus giving an admirable and completely

up-to-date account of Belgian distribution. The general picture is encouraging as far as Belgian breeding birds are concerned, in spite of the continued whittling down of marshland and other "wild" areas since 1940, with four new species which have bred for the first time and five others which are only now established as regular nesters. The passage of most waders continues to decline, and this is attributed to the barrage with which Spain, France and Italy cover the approaches to western Europe. Of winter visitors only the White-fronted Goose shows appreciable increase, while the Brent Goose has been very severely reduced in the past ten years and is now only of irregular occurrence (the Belgians can have no doubt about the danger in which this species stands). Among other details of interest to British readers especially in connection with trends in this country, Herons now number about 650 pairs compared with 450 pairs in 1939; Bittern, Great Crested Grebe and Avocet are increasing, also Little Ringed Plover notably in recent years; Eider, formerly a rare and irregular winter visitor to Channel coasts, has now been increasing for some years; similarly Great Snipe has become regular on passage recently, about 80 having been taken since 1930, and visits of Black-winged Stilt are becoming noticeably more frequent. On the other hand Gull-billed Tern and Red-crested Pochard remain rare vagrants, and there are no post-war records of American waders.

In addition to distribution there are sections on museum and field characters, habits, habitat; breeding; migration (which includes ringing recoveries up to March 1954, and several maps based thereon). For the purposes of this book "water-birds" cover divers, grebes, herons, ducks, gulls, auks, etc., as well as all the waders including Stone Curlew, also rails, storks, Kingfisher and Dipper. English names are given in a sub-heading to each species. There are 24 coloured plates each illustrating a number of birds.

P.A.D.H.

KEY TO THE NAMES OF BRITISH BIRDS. By R. D.

MACLEOD. (Pitman, London, 1954). 67pp. 10s. 6d.

HERE we have an enterprising book which sets out to acquaint the ordinary reader with the origins of the scientific as well as of the common names of British birds. Information relating to these latter can, of course, be more or less reliably found in any modern general dictionary which quotes etymologies, but for the former there has hitherto been no easily available work of reference. Since scientific names are often something of a mystery to many bird-watchers, one cannot but congratulate the author on his initiative.

A valuable "Introductory" shows carefully how the scientific nomenclature is built up largely from Latin and Greek sources and considers in general terms the principles of name-giving. Next

follows the main part of the book consisting of two lists, Scientific Names and Common Names, in which origins and etymologies are discussed. Unfortunately, in both lists only those names that can be found in *The Handbook of British Birds* are included. This limitation is particularly regrettable in the list of English names for many words in regular use are thus omitted, e.g. Bonxie, Dunnoek, Yellowhammer. Moreover, the author follows *The Handbook* so closely that he even treats the entries subspecifically, and this to such a degree that he sometimes finds himself explaining that the British race of some species is called British because it lives in Britain, e.g. British Oystercatcher. All this is hardly apposite in an etymological glossary of common English bird names. Our forefathers who gave the birds their names did not think in terms of modern ornithological classification!

In the Lists the reader will certainly find much which is useful, illuminating and sometimes diverting, and many a forbidding scientific name turns out to be highly appropriate as a description of colour, voice, shape or habit, or else recalls some long-forgotten superstition at one time attached to the bird. The author has drawn on many ancient and medieval authorities—these are duly catalogued—and has also consulted modern dictionaries, though no references are cited. This last omission is unfortunate, for so many of the etymologies quoted in this book are so erroneous that one wonders if the author even looked at the relevant philological literature. This part of the work is further unsatisfactory in that the reader is given no insight into etymological method and very little into the special problems associated with the study of bird-names. Such an omission in a book expressly for the use of those with no specialist knowledge of linguistic processes greatly lessens the utility of the Lists. In practice, the uninitiated reader can merely note the information given, he cannot really understand it. Unfortunately, not a little passes our understanding, as some random examples from List I must now show.

Accipiter ("hawk") is explained as a derivative of the Latin *accipio*, the meaning of which the author gives as "seize" though it is more usually regarded as "receive." But this is pure folk-etymology, the real origin is almost certainly "swift-winged". It seems rather pointless in a work like the present to quote an opinion that *Aquila* ("eagle") is related to *aqua* ("water"); it is like saying that *Curlew* comes from "curly". In fact, the meaning of the name is quite obscure. This sort of information is readily available, scientifically documented, e.g. in Ernout et Meillet, *Dictionnaire Etymologique de la Langue Latine*, 1951. Under *Alauda* ("lark") the author quotes Pliny's statement that the word is Celtic (i.e. Gaulish) and adds that it probably means "great songstress", in support of which he invites us to "compare Welsh *al* great, and *awed* song". But a glance at the new scientific Welsh

dictionary (*Geiriadur Prifysgol Cymru*, since 1950) teaches us that there is no such word as *al*, and never has been, while *awd* is a recent artificial spelling in Welsh of the English word "ode"! In sober fact, philology has not one single clue to the real meaning of *Alauda*. About Mr. Macleod's explanations in List I one may fairly state that, where the origin is not immediately apparent to anyone with a smattering of Latin and Greek, they are generally worthless.

Nor is List II any better. Indeed the treatment is, if anything, more uneven. Sometimes we are carried back to prehistoric roots, thus *Kite* is said to be probably from an Aryan root *skut*, but at other times we are only given the immediate source, thus *Heron* which was borrowed from Medieval French; actually the French word was itself borrowed from Old German. Of the root *skut* the less said the better; it is merely impossible. As in List I, several of the proposed etymologies are hopelessly wrong, thus *Coot*, *Grebe*, *Wren*. Others are extremely doubtful, e.g. *Lapwing*, *Puffin*. There is no evidence that *Shrike* is derived from Icelandic, as implied; it appears to be genuine English. The derivation of *Hawk* is given as though it were a proven fact, yet it is highly conjectural; on the other hand the origin of *Wheatear* is said to be doubtful, but it is really quite certain ("white rump"). These and other mistakes need never have been made if the author had consulted the most recent philological studies, or for that matter, the standard etymological dictionaries.

The idea of presenting the general public with a book on bird-names was undoubtedly praiseworthy and the author has broken new ground as far as the scientific nomenclature is concerned. But by failing to give himself the necessary philological training, he has committed a series of amateurish errors which rob his work of permanent value.

W.B.L. and I.J.F.-L.

LETTERS

"ANTING" BY BIRDS

SIRS,—The announcement by the Editors of *British Birds* (*antea*, vol. xlvii, pp. 312-313), based on the work of H. Poulsen, that "anting" by birds is "quite automatic" and is merely performed to rub off formic acid or any other irritant from the head is likely to be taken as an *ex-cathedra* pronouncement by many who have not closely observed this behaviour. May I therefore briefly state some reasons why I am very far from being in agreement with the above theory?

(1) Some birds that show intense anting behaviour do not eat worker ants, but discard them after use.

(2) The Jay (*Garrulus glandarius*) Green Magpie (*Cissa chinensis*) and Blue Magpie (*Urocissa erythrorhynchos*) do not pick up ants in bill when anting.

(3) The Rook and Carrion Crow (*Corvus frugilegus* and *C. corone*) have special movements which involve lying "spread-eagled" among the ants (see *Ibis*, vol. 97, pp. 147-149).

(4) The Jay's reaction to irritation on (?or near) the eye is to rub the eye on top of the shoulder. This is not an anting movement (it is shown in identical form by many birds, such as pigeons, which never ant) but the bird will use it whilst anting if formic acid gets on its eye.

(5) The Starling (*Sturnus vulgaris*) when anting picks up ant after ant until it has a large ball of them in the tip of its bill. This behaviour is quite different to that meted out to hairy or distasteful insects being prepared for food, which are swallowed or discarded before the next is picked up.

(6) Game-birds which—unlike most Passerines—often eat worker ants, and which habitually dust-bathe, do not ant, although they react in the same way as the Jay when formic acid gets on their eye.

That under certain circumstances irritants applied to a bird's face may serve as a releaser for the anting movements—especially in captive birds that have been long denied the opportunity of anting—I do not for a moment doubt. It may even be that anting had its origin in efforts to remove formic acid, although this is difficult to reconcile with the very different movements employed by species which do not ant (and some that do, when not in anting mood), just as nest-building seems to have originated in displacement movements and re-directed aggressiveness, but in its present form it is, in my opinion, a very distinct behaviour pattern, unconnected with feeding.

DEREK GOODWIN.

MIGRANTS IN THE BAY OF BISCAY

SIRS,—We are collecting records of land-birds seen on or from ships in the Bay of Biscay (including the area south of Ireland to the north coast of Spain) and would greatly appreciate any such records that ornithologists may have. In addition to species, approximate numbers seen and dates of observations, we would like to have, wherever possible, weather notes, any flight directions, the approximate position of the ship and the time of the observations. Letters should be addressed to us at the Edward Grey Institute, Botanic Garden, Oxford. In the event of publication all records will be fully acknowledged.

R. E. MOREAU, D. F. OWEN AND D. W. SNOW

NOTICE TO CONTRIBUTORS

British Birds publishes material dealing with original observations on the birds of Britain and Western Europe, or where appropriate, on birds of this area as observed in other parts of their range. Except for records of rarities, Papers and Notes are normally accepted only on condition that the material is not being offered to any other journal. Photographs (glossy prints showing good contrast) and sketches are welcomed. Proofs of all contributions accepted are sent to authors before publication. After publication 20 separates of Papers are sent free to authors; additional copies, for which a charge is made, can be provided if ordered when the proofs are returned.

Contributors are asked to observe the following points, attention to which saves the waste of much editorial time on trivial alterations:

1. Papers should be typewritten with double spacing, and on one side of the sheet only. Shorter contributions, if not typed, must be clearly written and with similar spacing. Failure to help in this way may result in delays to publication.

2. Notes should be worded as concisely as possible, and drawn up in the form in which they will be printed, with signature in block capitals and the writer's address clearly written on the same sheet. If more than one Note is submitted, each should be on a separate sheet, with signature and address repeated. In the case of rarity records, any supporting description which is too detailed for publication should be attached separately.

3. Certain conventions of style and lay-out are essential to preserve the uniformity of any publication. Authors of Papers in particular, especially of those containing systematic lists, reference lists, Tables, etc. should consult the ones in this issue as a guide to general presentation. English names of species should have capital initials for each word, except after a hyphen (e.g. Siberian Thrush, Yellow-headed Wagtail), but group terms should not (e.g. thrushes, wagtails). English names are those used in *The Handbook of British Birds*, with the exception of the changes listed in *British Birds* in 1953 (vol. xlv, pp. 2-3). The scientific name of each species should be given (in brackets and underlined) immediately after the first mention of the English name. Sub-specific names should not be used except where they are relevant to the discussion. It is sometimes more convenient to list scientific names in an appendix. Dates should take the form "1st January 1955" and no other, except in Tables where they may be abbreviated to "1st Jan.", "Jan. 1st", or even "Jan. 1", whichever most suits the lay-out of the Table concerned. It is particularly requested that authors should pay attention to reference lists, which otherwise cause much unnecessary work. These should take the following form:

TUCKER, B. W. (1949): "Species and subspecies: a review for general ornithologists." *Brit. Birds*, xlii: 129-134.

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Various other conventions concerning references, including their use in the text, should be noted by consulting previous examples.

4. Tables should be numbered with Roman numerals, and the title typed above in the style used in this issue. The title and any headings within the Table should not be underlined, because this sometimes makes it difficult for the Editor to indicate the type to be used. It is most important that the lay-out of each Table should be carefully planned with an eye to its final appearance; above all, it should be borne in mind that Tables must either fit into the width of a page, or be designed to fit a whole page lengthways. All Tables should be self-explanatory.

5. Figures should be numbered with Arabic numerals, and the captions typed on a separate sheet. All line-drawings should be in Indian ink on good quality drawing paper (not of an absorbent nature) or, where necessary, on graph paper, but this must be light-blue or very pale grey. It is best if they are drawn twice the size of the final reproduction (ideally, therefore, for the normal 4" width the original should be 8" wide). It is most important to consider how each drawing will fit into the page. Unless the author has had considerable experience as a draughtsman, all lettering, figures, arrows, etc. should either be inserted lightly in pencil or else marked in position on a tracing of the drawing attached to it. In maps it is often desirable to have a tinted (stippled etc.) area, and this should be indicated by a light-blue wash and left to the draughtsman.

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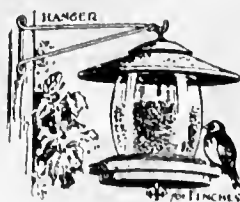
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Cover photograph by C. W. G. Paulson: Lesser Yellowlegs (*Tringa flavipes*)
in Hampshire (see plate 12).

BRITISH BIRDS

VOL. XLVIII, NUMBER 2, FEBRUARY 1955

FEEDING RATES OF GREAT TITS

By JOHN GIBB

(*Edward Grey Institute, Oxford*)

THIS paper summarizes data obtained mechanically from 52 broods of the Great Tit (*Parus major*), in a mixed broad-leaved wood at Wytham, near Oxford, from 1948 to 1951. Full figures, with details of individual nests, are deposited at the Edward Grey Institute. The work formed part of a population study still in progress, some results of which have appeared elsewhere (Gibb, 1950, 1954 a and b). The present paper repeats for completeness the few data on feeding rates in 1948 and 1949, from the 1950 paper. The mechanical devices are described in an appendix.

The author is glad to acknowledge assistance from Dr. David Lack, Director of the Edward Grey Institute, and with statistical analysis from Dr. M. R. Sampford lately of the Oxford University Lectureship in the Design and Analysis of Scientific Experiment. Mr. R. E. Moreau, Mr. H. N. Southern and Dr. C. B. Williams read the typescript and made many helpful suggestions.

The frequency with which parent Great Tits visited their broods during the nestling period was measured at 13 nests in 1948, 11 in 1949, 11 in 1950 and 17 in 1951. In 1948 and 1949 mechanical counters, which were read once a day, were used to record the total number of visits by the birds between the observer's inspections. In 1950 and 1951 continuous recorders registered each visit as a perforation on a moving tape, thus giving the distribution of the visits through the day, as well as the daily totals. Neither counter nor recorder distinguished visits by the male from those by the female.

Nearly all the parents' visits in the nestling period are for feeding the young. Kluijver (1950) estimated that food was brought by Great Tits in 80% of the visits on the first day after the young hatched, 95% on the second day and thereafter 100%. Normally only one, but occasionally two or more morsels of food are brought at each visit. There is wide variation in the size of food organisms brought by Great Tits to the nest; the average size tends to increase as the young grow older (Tinbergen, 1949; Betts, 1955). Thus the visiting frequency is not a good measure of the amount of food brought to the nest.

There is enormous variation in the frequency with which Great Tits feed their young, even under apparently identical environmental conditions; this is presumably related to individual food preferences (*cf.* Tinbergen, 1949). Hence long series of recordings,

at many different nests, are necessary before valid conclusions can be reached. Moreover, the changing food situation from place to place, from year to year and from day to day must be considered. The rate of feeding was not affected by changes in air temperature or relative humidity, nor by moderately strong winds (gales were not experienced). Heavy rain, however, slows down the rate of feeding and may even prevent it altogether for short periods. Similarly Kendeigh (1952), working with House Wrens (*Troglodytes aedon*), found it "... impossible to detect any significant influence of weather [air temp. and rel. humidity] on the rate of feeding".

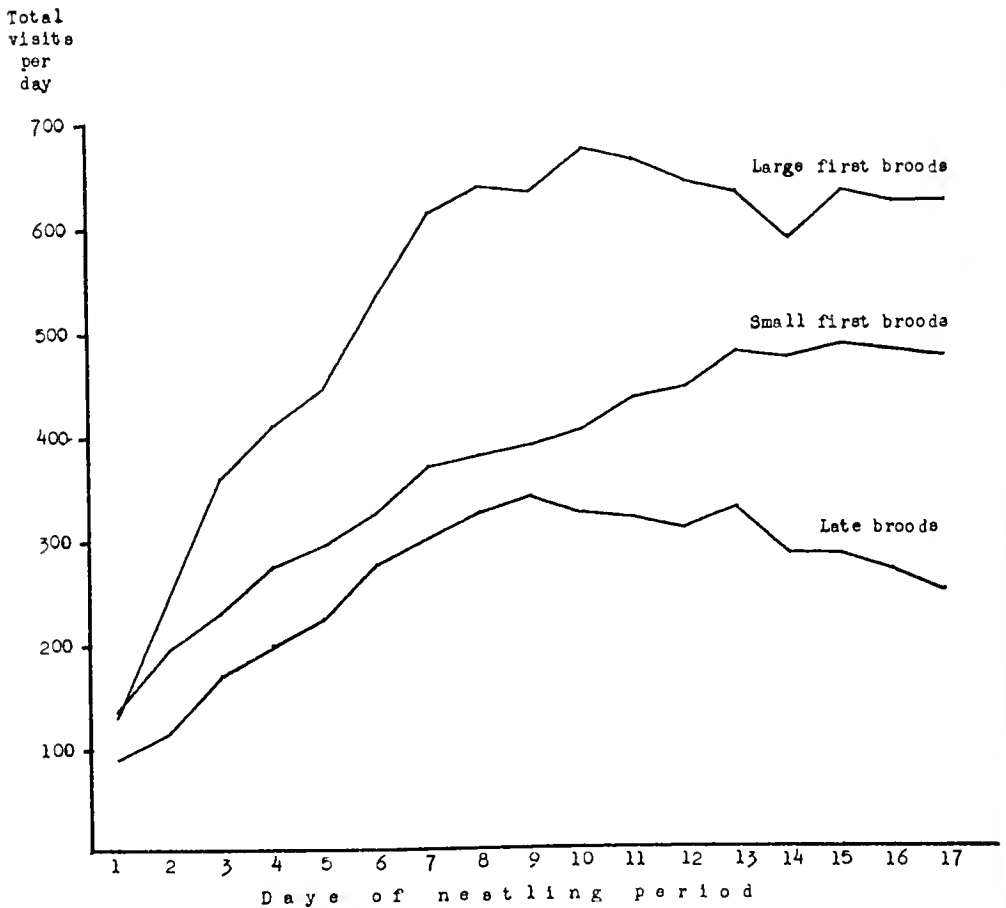


FIG. 1.—AVERAGE DAILY TOTAL NUMBER OF VISITS PAID TO THE NEST BY PARENT GREAT TITS (*Parus major*) DURING THE NESTLING PERIOD

Note the slackening off late in the nestling period of large first broods and late broods.

NUMBER OF VISITS PER DAY (Fig. 1)

In every year, the larger* the brood the more frequent were the parents' visits, but not in proportion to the number of young. A

* The adjectives "large" and "small", when applied to broods, always refer to the number of young present.

member of a small family therefore received more food per day than did one of a large family. This relationship has been found among many nidicolous birds (*e.g.* Moreau 1947). Kluijver (1950) did not confirm it among eight Great Tit broods; but these were taken from five separate localities and in six different years.

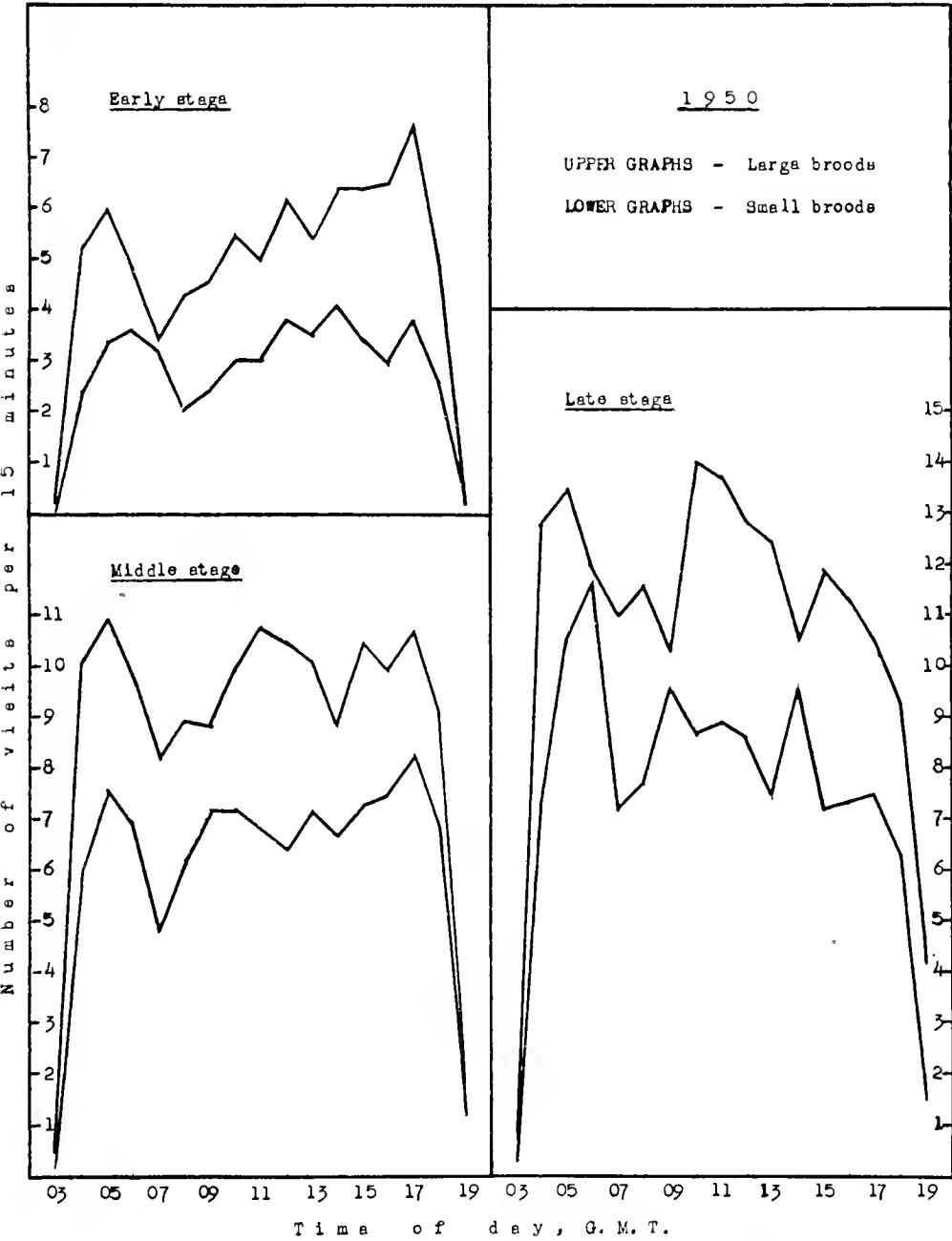


FIG. 2—AVERAGE NUMBER OF VISITS PER 15 MINUTES PAID TO THE NEST BY PARENT GREAT TITS (*Parus major*) AT THREE STAGES OF THE NESTLING PERIOD: FIRST BROODS IN 1950

Note reduced activity from 0600-0900 hours due to routine inspection of the nests by the observer.

Correlating with the frequency, young in small first broods were on the average slightly heavier than those in large first broods, especially in years when food was scarce. Although late broods had fewer young than first broods, their average weight was much

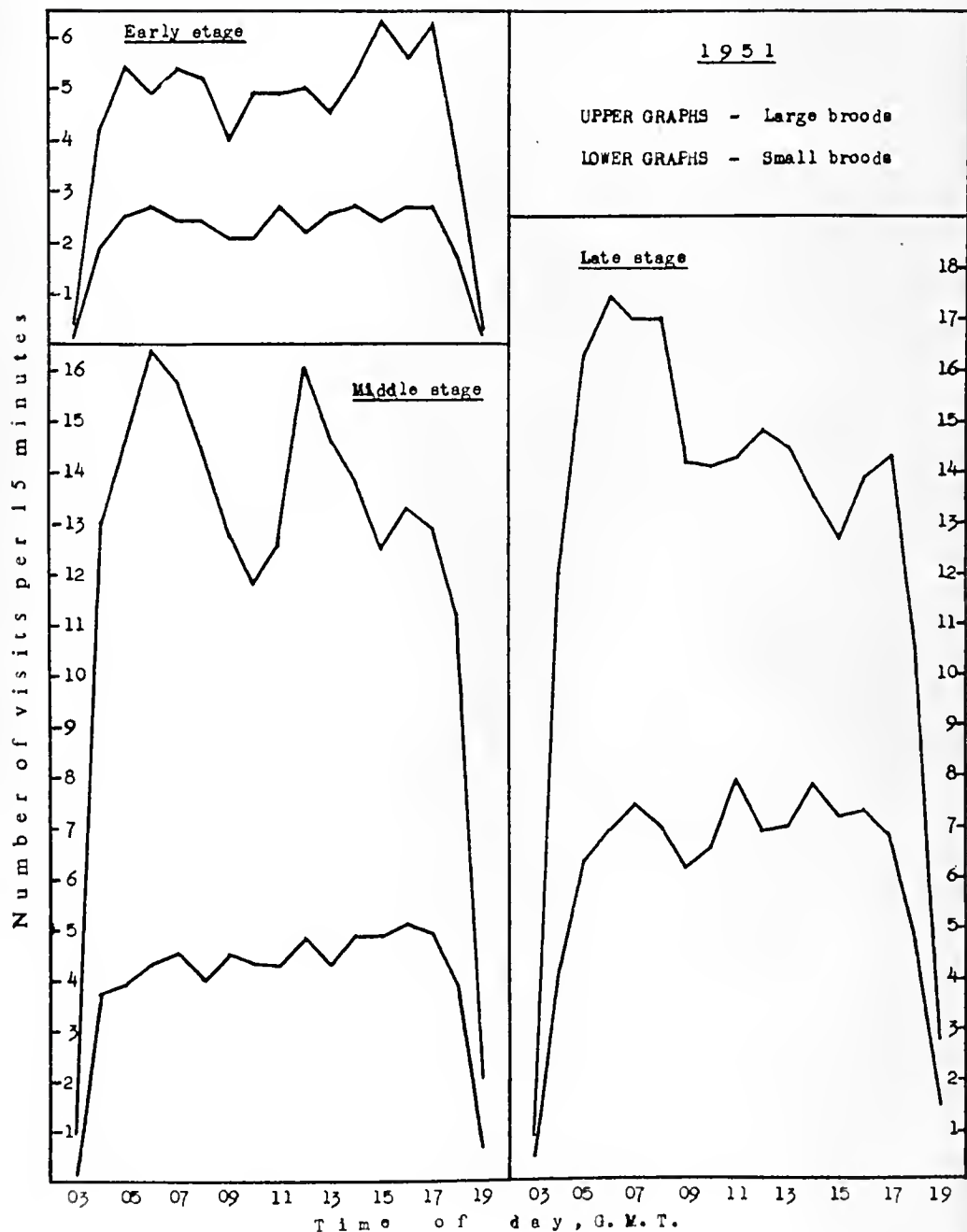


FIG. 3.—AVERAGE NUMBER OF VISITS PER 15 MINUTES PAID TO THE NEST BY PARENT GREAT TITS (*Parus major*) AT THREE STAGES OF THE NESTLING PERIOD: FIRST BROODS IN 1951

Note reduced activity from 0800-1100 hours due to routine inspection of the nests by the observer.

less even than that of young in large first broods; they were in the nest after the caterpillars, on which first broods were mainly fed, had pupated. Very few young in first broods died in the nest, but many young in late broods died of starvation when about 15 days old.

The daily total of visits usually increased each day for the first

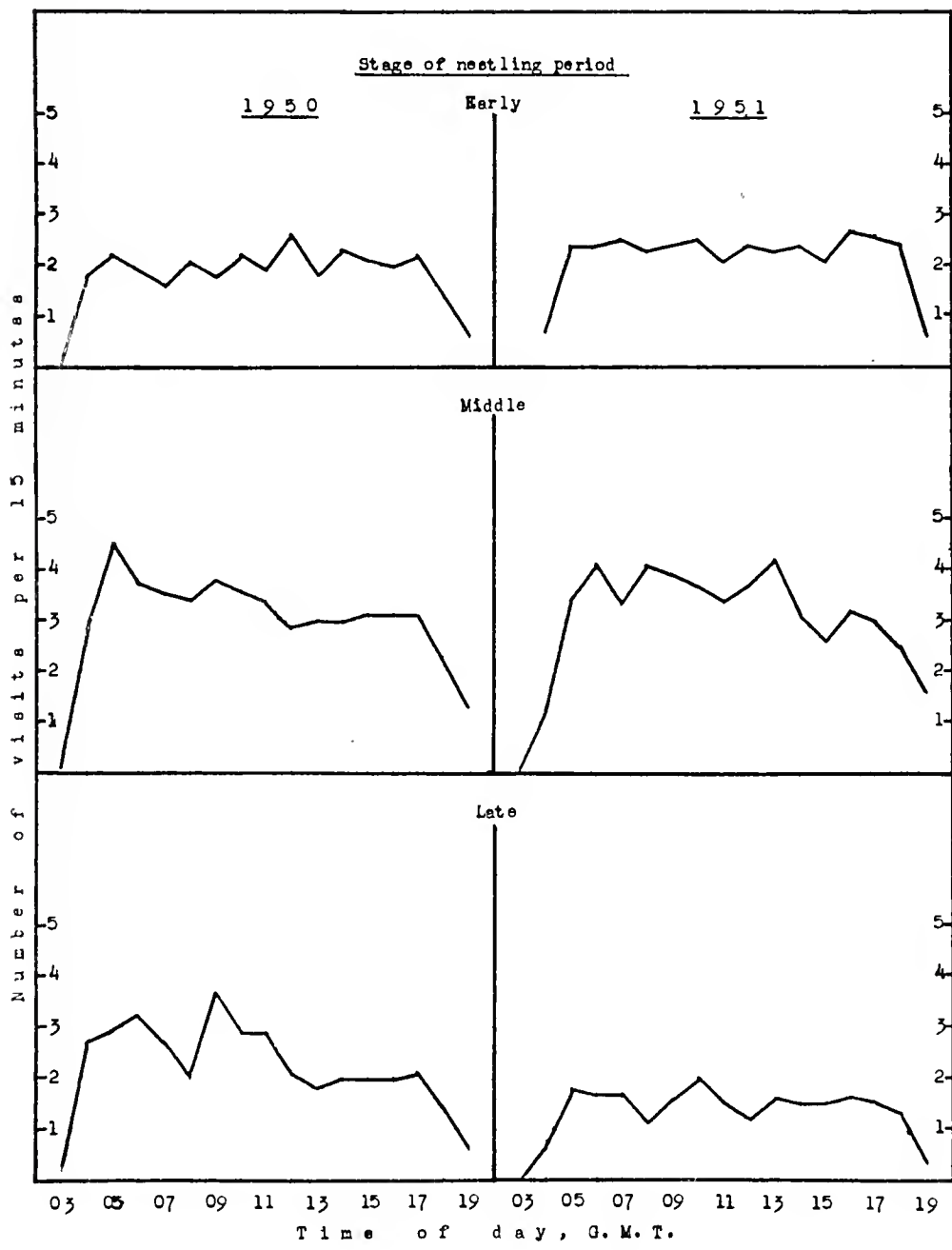


FIG. 4—AVERAGE NUMBER OF VISITS PER 15 MINUTES PAID TO THE NEST BY PARENT GREAT TITS (*Parus major*) AT THREE STAGES OF THE NESTLING PERIOD: LATE (REPEAT AND SECOND) BROODS IN 1950 AND 1951

half of the nestling period. In the second half of the nestling period, activity was usually maintained or increased at small first broods, but slackened off at large first broods and late broods. This strongly suggests that parent Great Tits feeding large or late broods were becoming tired, and so could not maintain their rate of feeding. Arnold (1952) gives a striking case where a female Blue Tit (*P. caeruleus*) disappeared half-way through the nestling period. The male at first almost exactly doubled his rate of feeding to compensate for the female's absence, but after the fifteenth day fed very much more slowly. This may be typical of broods where the parent is straining to feed.

DIURNAL RHYTHM IN VISITING ACTIVITY (Figs. 2, 3 & 4)

Much the most conspicuous fluctuation at many nests resulted from the routine inspection by the observer. Nests were inspected only once a day, and for about ten minutes each at the outside. Nevertheless the birds fed significantly less often in the hours including the inspection than at other times. Apart from this, the diurnal rhythm was extremely variable. When all stages of all broods were lumped together, no rhythm was apparent; but significant differences were found when broods were grouped as large or small first broods, or late broods. This rhythm may be summarized as follows.

Early in the nestling period: Great Tits usually fed their broods faster in the afternoon (1200-1859 hours G.M.T.) than in the morning (0400-1159 hours G.M.T.), and rarely *vice versa*; this was particularly so with large broods. Kendeigh (1952) found a similar diurnal rhythm in feeding early in the nestling period of House Wrens, but he did not compare broods of different size. Kendeigh also noticed that this feeding rhythm was the reverse of the female's brooding rhythm; Hinde (1952) and Betts (1955) found a brooding rhythm in the Great Tit similar to that of Kendeigh's House Wrens. Since air temperatures are normally lower in the morning than in the afternoon, it is reasonable that the young should be brooded most, and therefore fed least often, while it is cool. This may account for the characteristic feeding rhythm early in the nestling period, but it does not explain differences with changing brood-size. However, broods with many young may demand greater effort by both parents in the afternoon than is necessary with fewer young per brood; hence females with large families may brood less in the afternoon than those with small ones. Large broods presumably conserve their heat more efficiently than small ones, so may actually need less brooding.

Late in the nestling period: Great Tits with small first broods sometimes continued to feed faster in the afternoon than in the morning, as in the earlier part of the nestling period; sometimes fed about equally through the day (e.g. in 1951); and sometimes fed faster in the morning than in the afternoon (e.g. in 1950). Large first broods and late broods were usually fed faster in the

morning than in the afternoon by this stage. This again suggests that parents of large or late broods were tired, and could not keep up their initial rate of feeding all day. A similar situation was found in the Swift (*Apus apus*): in good feeding weather broods of three were fed more often, and in bad feeding weather less often, than broods of two (Lack and Lack, 1951). The afternoon slackening of late broods of Great Tits was actually more pronounced in the middle, than late in the nestling period; this was probably because nestling mortality in late broods lightened the parents' task later in the nestling period.

Kluijver (1950) found that the afternoon minimum frequency of visiting was always about 60% of the morning maximum, irrespective of the amount of feeding done in the morning; he did not compare broods of different sizes, or different stages of the nestling period. Kluijver therefore suggested that "... tiredness on the part of the adults is not a major cause of the afternoon decline in their activity". There are other possible explanations of the afternoon slackening late in the nestling period. First, the young might have been satiated by the afternoon, and so demand less food. This is unlikely because, in the tits, parents of large or late broods, which were probably shortest of food, slackened off more than did parents of small first broods. Secondly, rising air temperature might have inhibited feeding; but the frequency of visits on different days was not correlated with air temperature. Kluijver (1950), too, dismissed these possible explanations, concluding with Palmgren (1944) that the diurnal rhythm in feeding must be primarily controlled by the birds' own innate rhythm. Neither Kluijver nor Palmgren suggested what controls this innate rhythm.

Palmgren (1949) stated that, "A tendency towards diphasic sleep is inherent in most birds", but that "the feeding of the young may be so urgent that no definite rhythm develops." On the contrary, I conclude that the greater the difficulty that the parents have in feeding their young, the more accentuated is their diurnal rhythm; for there is more occasion for the parents to slacken when they have been straining to feed their young than when they have been doing so at their leisure.

SUMMARY

1. The frequency with which parent Great Tits visited their broods during the nestling period was measured mechanically at 52 nests, from 1947-51.

2. In the later stages of the nestling period of large first broods and late broods, the daily total number of visits decreased markedly, and the afternoon feeding rate was less than the morning rate.

3. It is concluded that parent birds with large or late broods were straining to feed their young. Hence they were unable to maintain their rate of visiting towards the end of the nestling period, or in the afternoon.

REFERENCES

- ARNOLD, G. A. AND ARNOLD, M. A. (1952): "The nesting of a pair of Blue Tits." *Brit. Birds*, xlv: 175-180.
- BETTS, M. (1955): "The behaviour of a pair of Great Tits at the nest." *Brit. Birds*, xlviii: 77-82.
- GIBB, J. (1950): "The breeding biology of the Great and Blue Titmice." *Ibis*, 92: 507-539.
- (1954a): "Population changes of titmice, 1947-1951." *Bird Study*, 1: 40-48.
- (1954b): "Feeding ecology of tits, with notes on Treecreeper and Goldcrest." *Ibis*, 96: 513-543.
- HINDE, R. A. (1952): "The behaviour of the Great Tit and some related species". *Behaviour*, Suppl. II: 1-201.
- KENDEIGH, S. C. (1952): "Parental care and its evolution in birds". *Illinois Biol. Monogs.*, 22 (1-3).
- KLUIJVER, H. N. (1950): "Daily routines of the Great Tit, *Parus m. major* L." *Ardea*, 38: 99-135.
- LACK, D. AND E. (1951): "The breeding biology of the Swift *Apus apus*". *Ibis*, 93: 501-546.
- MOREAU, R. E. (1947): "Relations between number in brood, feeding rate and nestling period in nine species of birds in Tanganyika Territory". *J. Anim. Ecol.*, 16: 205-209.
- PALMGREN, P. (1944): "Studien über Tagesrhythmik gekäfigter Zugvogel". *Zeitschr.f.Tierpsych.*, 6: 44-86.
- (1949): "On the diurnal rhythm of activity and rest in birds." *Ibis*, 91: 561-576.
- TINBERGEN, L. (1949): "Bosvogels en Insecten." *Nederlandsch Boschbouw Tijdschrift*, 4: 91-105.

APPENDIX: THE MECHANICAL RECORDERS

The apparatus was in two parts: (i) an electrical switching device at the entrance hole of the nestbox (Fig. 5), and (ii) the recorder (Fig. 6). The recorder was wired to the switch at the nest, and could be placed at any distance from it; it was normally housed in a tin at the foot of the tree bearing the nestbox.

The switch was made to complete an electrical circuit whenever the adult bird entered (or left) the nest. A "gate" was hung partly across the entrance hole. This was free to swing inwards and outwards, but was held in position across the hole by a very light spring. To get in or out, the bird had to push open the gate. An oval cam was fixed eccentrically on one end of the spindle on which the gate was mounted; the cam turned as the gate opened. A thin metal strip, mounted on an insulated block, was set with one end just clear of the cam when the gate was closed. When the gate opened inwards (but not outwards) the cam made contact with the metal strip, thereby completing the circuit.

Only entries were recorded when the switch was screwed to the outside of the nestbox, and only exits when screwed to the inside. An elaboration of this switch included two cams, one completing a circuit as the bird came out, and the other completing a different circuit as it left. This was used by Hinde (1952), studying the rhythm of incubation, for which times of entry and exit were needed. For recording visits of the parent birds feeding young, either entries or exits were sufficient. In 1951, a micro-switch was

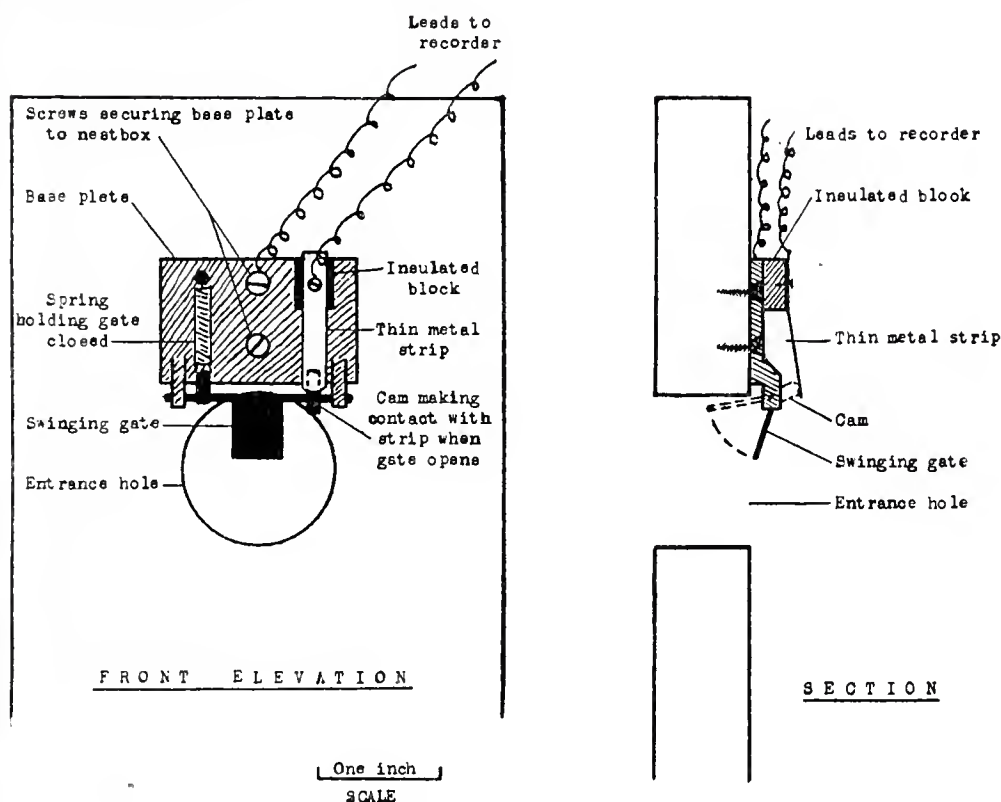
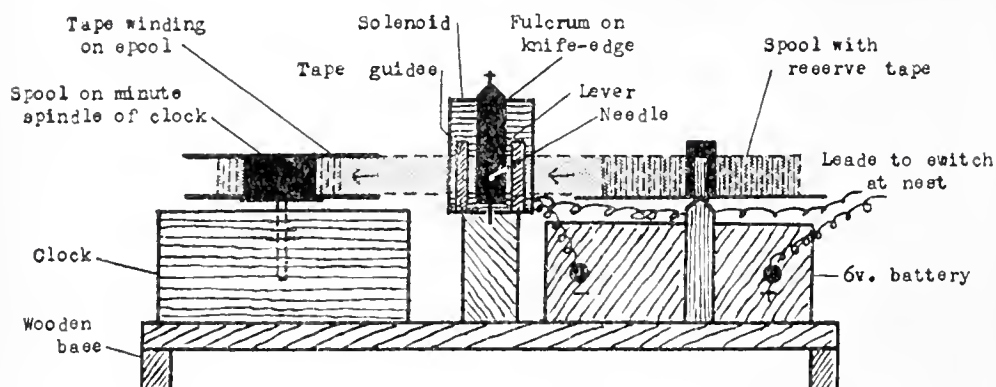
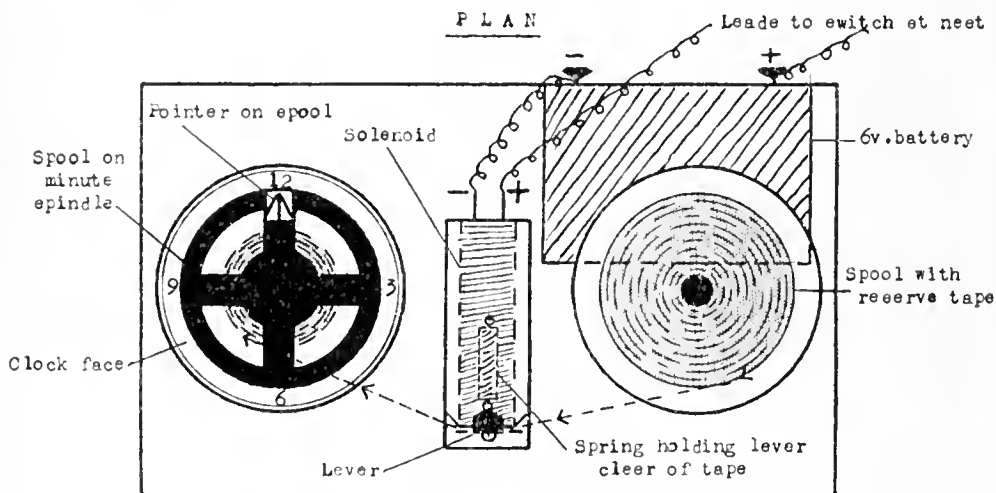


FIG. 5—THE SWITCH AT THE ENTRANCE HOLE OF THE NESTBOX

substituted for the thin metal strip; this was operated by a short lever bearing on the cam.

The recorder was made so that a paper tape was drawn off a reserve spool and on to another spool, which was mounted on the minute hand of a clock. Between the two spools, the paper passed between (a) one end of a solenoid, and (b) a metal lever in which was fixed the point of a needle. When the circuit was completed by the bird at the nest, this lever was drawn sharply against the solenoid and the needle punctured the paper. Immediately the circuit was broken, the lever returned to its first position and the paper was freed from the needle. An ordinary 6-volt battery was used. The paper was drawn across the end of the solenoid by a cheap 30-hour clock. Typewriter-ribbon spools were used to hold the paper.

The rate at which the paper tape was drawn across the solenoid varied with the circumference of the "core" of the spool on the clock. This circumference increased with the amount of tape wound upon the spool. Hence units of time could not be marked on the tape beforehand; instead, this was done when the spool on the clock was full. A sharp needle was driven through the layers of paper at right angles to the axis of the spool at 0° , 90° , 180° and 270° ; care was taken to pierce the paper to one side of the line of punctures marking the birds' visits. When unwound for counting,

FRONT ELEVATIONP L A N

One inch
SCALE

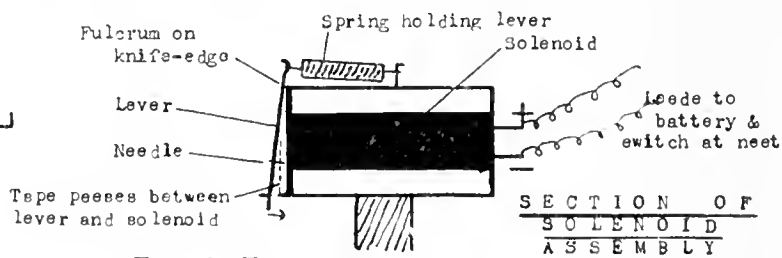
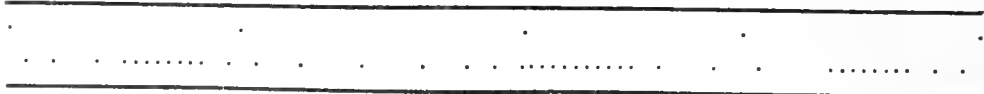


FIG. 6—THE RECORDER

the tape was then already marked off at intervals of 15 minutes. A strip of one hour's record might then appear thus:—



The upper row of punctures (= dots) are at intervals of 15 minutes, and the lower row mark the birds' visits.

Twelve identical apparatuses were used in 1950 and 1951. In 1948 and 1949 a similar switching device was used, but with different recorders. These only *counted* the visits, without giving their distribution in time; they were less satisfactory, so are not described.

AIRCRAFT OBSERVATIONS OF BIRDS IN FLIGHT

By CAPTAIN K. D. G. MITCHELL

INTRODUCTION

THE heights attained by birds, whether on migration or not, have in the past led to considerable speculation. Few authors on diurnal migration in recent years have been able to eliminate the possibility of a proportion of movement taking place beyond visual range and watching from the ground has given some indication of such activity. Also, observations are made from time to time on, for example, aerial song or thermal flights which indicate the reaching of considerable altitudes. However, the extent of high flying has been most difficult to assess and it seems, therefore, worth setting down a record of all my observations obtained from aircraft during the course of my duties as an airline pilot, in the hope that others will be encouraged to keep similar records. This paper is developed from the account of my records up to and including 1952 which appeared in the *Merseyside Naturalists' Association Bird Report* for 1952-53. The observations are listed in detail in Table I which is discussed below.

LIMITATIONS

As I am engaged mainly on scheduled passenger operations, deviation from the normal route, course or height to obtain further data has not been possible. Thus, much additional information on, for example, heading and speed has unavoidably been lost. Similarly, observations are sometimes incomplete due to my inability to record details until a suitable opportunity arises. Further, owing to preoccupation with aircraft duties no effort has been made to identify birds seen at a height of less than 500 feet above the ground, any such height being only transitory shortly after take-off or before landing. Birds are of course seen and occasionally struck during take-off and landing, but my impression is that, though there is obviously a reduction in the volume of flying with height, even such a modest height as 200 feet is above a great proportion of all bird flight.

Cruising heights vary considerably according to weather, route, distance and air traffic density, but the majority of records below 2500 feet have been during climb to or descent from cruising altitude.

IDENTIFICATION

As conditions for recognition are usually excellent, identification has not presented any undue difficulties. All birds are seen against

Species	No.	Date	Local time	Place
Gannet (<i>Sula bassana</i>)	1	29.1.54	1545	Pentland Firth, Scotland.
Cormorant (<i>Phalacrocorax carbo</i>)	3	?	—	Port Erin, Isle of Man.
	1	14.7.54	1630	9 miles SSE of Bournemouth, Hants.
White Stork (<i>Ciconia ciconia</i>)	1	8.7.53	1300	Lauenberg, 25 miles SE of Hamburg, Germany.
Tufted Duck (<i>Aythya fuligula</i>)	3	8.4.54	0930	Havelsee, 7 miles W of Berlin, Germany.
Grey [Lag-?] Goose [(<i>Anser anser</i>)?]	30	8.10.53	1020	5 miles E of Brunswick, Germany.
Pale grey forewing seen clearly in all 3 cases	20	"	"	" "
	40	29.12.53	1435	Wittenberge, 75 miles NW of Berlin, Germany.
Griffon Vulture (<i>Gyps fulvus</i>)	1	12.8.54	1353	Toledo Mts., Spain.
Buzzard sp. (<i>Buteo</i> sp.)	5	20.3.53	1518	5 miles N of Helmstedt, Germany.
	4	21.3.53	1440	Havelberg, 60 miles NW of Berlin, Germany.
	1	8.10.53	1420	Wahnerheide, Germany.
Kite (<i>Milvus milvus</i>)	1	7.7.53	1300	Wahnerheide.
Coot (<i>Fulica atra</i>)	9	8.10.53	1050	Havel, 8 miles NW of Potsdam, Germany.
Lapwing (<i>Vanellus vanellus</i>)	10	19.2.50	1200	Liverpool Bay, Bar Lightship.
	12	13.12.50	1335	Wolverhampton, Staffs.
	30	15.3.51	1330	Rugby, Warwickshire.
	12	11.2.52	1520	8 miles ESE of Castletown, I.O.M.
	3	26.6.53	—	Reading, Berks.
Dunlin (<i>Calidris alpina</i>)	15	29.4.48	1815	River Mersey, Speke, Liverpool, Lancs.
	30	23.10.50	1510	3 miles ESE of Castletown, I.O.M.
Lesser Black-backed Gull (<i>Larus fuscus</i>)	1	24.4.48	—	Castletown Bay, I.O.M.
	1	3.5.48	1400	Ormskirk, Lancs.
	2	16.8.51	—	Knowsley, Lancs.
	2	16.8.51	—	Ronaldsway, I.O.M.
	1	26.7.52	—	St. Helens, Lancs.
	1	6.7.54	—	Wilmslow, Cheshire.

Direction and heading at height in heading not ways known)	Weather (Cloud heights in feet) (Wind direction in degrees from true north)	Remarks
	3/8 Cumulus, base 3,000. Wind 110/25 kts.	Aircraft at 1,000 ft.
Circling	7/8 Cumulus, base 2,500 Wind 280/30 kts.	
NW	Fine. No cloud	Aircraft at 3,000 ft., but bird seen well flying downstream and high above River Elbe
N	8/8 Stratus, tops 1,500 to W 3/8 Cumulus, base 2,000, tops 5,500 to E. Wind 020/15 kts.	Birds climbing in the clear, over the Havel
W	3/8 Cumulus, base 2,200. Wind light and variable	Aircraft at 2,000 ft.
W	Weather as above	
SE	6/8 Strato-cumulus, tops 3,200 Wind 340/20 kts.	Aircraft at 4,500. Birds far below but on top of cloud layer
Circling	No low cloud. Wind 230/20 kts. Vis : 10 miles.	Position 39° 37' N., 03° 56' W., over E end of a 20 mile long, 3 mile wide E-W ridge, maximum ht. 4,450 ft., average ht. 3,250-4,000 ft. with general level of surrounding country 1,950-3,250 ft. Bird just below top of haze layer (9,000 ft.)
Circling	Fine. No cloud Wind light southerly	
Circling	Fine. No cloud Wind light northerly	
Circling	Fine. No cloud Wind light and variable	
Circling	5/8 Cumulus, base 3,500	
Circling	3/8 Cumulus, base 2,200 Wind light and variable	Birds climbing
SSW		
SW	8/8 Stratus well below 8/8 Alto-stratus high above	Birds flying in wide lane between layered cloud. Very cold day
E	3/8 Strato-cumulus, top 4,000 Wind 290/15 kts. Fine	Aircraft at 5,500 ft.
W	7/8 upper cloud. Cold Wind 030/15 kts.	
WSW	2/8 Stratus, tops 1,500 Wind lt. and var. Vis. : 7 miles	
	6/8 Cumulus cloud above Dull day	
	Fine. Light smoke haze	
	As above	
Circling	4/8 Cumulus, base 2,500 Wind 330/10 kts.	

Species.	No.	Date	Local time	Place.
Herring Gull (<i>Larus argentatus</i>)	2	24.4.48	—	2 miles SE of Castletown, I.O.M.
	6	12.9.48	—	Belfast City, Northern Ireland.
	2	10.3.52	1240	Ramsey, I.O.M.
	2	11.4.52	0925	Comber, Co. Down.
	2	2.4.53	1000	Belfast City, Northern Ireland.
	2	3.11.53	1240	Aberdeen.
	c30	16.4.54	1210-1220	Dundee to Montrose, Angus.
	1	18.7.54	1113	St. Helier, Jersey, Channel Islands.
	1	29.8.54	1801	5 miles N of Cap de la Hague, Cherbourg Peninsula, France
	1	5.9.54	1618	Uxbridge, Middlesex.
	1	25.9.54	1822	12 miles N of N. Coast of Jersey, Channel Islands.
Black-headed Gull (<i>Larus ridibundus</i>)	12	10.3.52	1310	Speke, Liverpool, Lanes.
Domestic Pigeon (<i>Columba sp.</i>)	5	21.7.54	0910	Greenford, Middlesex.
Swift (<i>Apus apus</i>)	1	12.8.51	1715	Portland Bill, Dorset.
	1	28.6.53	0610	Civitavecchia, 40 miles NW of Rome, Italy.
	1	5.7.53	1710	Uxbridge, Middlesex.
	2	7.7.53	1440	Tempelhof Airfield, Berlin, Germany.
	1	14.7.54	1910	Heston, Middlesex.
	1	18.7.54	1522	Denham, Bucks.
	1	21.7.54	0840	Greenford, Middlesex.
	1	21.7.54	0910	„ „
	1	23.7.54	1715	Uxbridge, Middlesex.
	1	29.7.54	1450	Schiphol, Amsterdam, Holland.
	1	5.8.54	1607	White Waltham, nr. Maidenhead, Bucks.
Skylark (<i>Alauda arvensis</i>)	1	12.8.48	—	Speke, Liverpool, Lanes.
	1	6.4.54	—	Gatow Airfield, Berlin, Germany.
Sand Martin (<i>Riparia riparia</i>)	2	11.9.52	1255	Portaferry, Co. Down.
Raven (<i>Corvus corax</i>)	1	6.9.52	—	Castletown, I.O.M.

Height and heading indicated height in feet (heading not always known)	Weather (Cloud heights in feet) (Wind direction in degrees from true north)	Remarks
00		Various insects are carried aloft during the summer months by rising currents of warm air (thermals). Those striking an aircraft wind-screen are crushed beyond recognition. They are often encountered at heights up to 6,000 ft. or more and possibly attract gulls "floating" over inland areas in summer
00		
00	Sea fog from surface to 800 but clear to North	
00		
00	4/8 Cumulus, base 2,500 Wind light westerly. Vis. : 30 miles	
00	Fine. No low cloud	
average 00	5/8 Cumulus, base 2,500 Wind 010/20 kts.	Height of aircraft 2,000 ft. Height of ground average 500 ft. First insects of year on windscreen
00	7/8 Stratus, base 1,000 Wind 290/25 kts.	
00 E	3/8 Cirro-stratus, base 15,000, or above Wind 260/20 kts., Vis. : over 10 miles	Aircraft at 3,100 ft.
00	7/8 Cumulus, base 3,700 Wind 160/10 kts., Vis. : 8 miles	
00 NNW	3/8 Stratus, base 1,600 8/8 medium cloud above Wind 300/25 kts., Vis. : 8 miles	
00		Wheeling in a tight circle after insects (see Herring Gull above)
00	4/8 Cumulus base 2,000 Wind 300/15 kts.	
00	Fine. Slight haze	
00	Fine. Wind calm	
00	Fine	
00	6/8 Cumulus, base 3,000	Both apparently descending rapidly
00	4/8 Cumulus, base 3,000 Wind 300/20 kts.	
00	5/8 Stratus, base 1,800 Wind 310/15 kts.	
00	4/8 Cumulus, base 2,000 Wind 300/15 kts.	
00	As above	
00	6/8 Stratus, base 1,400 Wind 240/12 kts. Light rain	
00	5/8 Cumulus, base 2,500 Wind 260/25 kts.	
00 E	4/8 Cumulus, base 3,800 Wind 270/20 kts., Vis. : over 10 miles	
00		Apparently singing
00	8/8 Nimbo-stratus, base 3,000 Light rain	" "
00		I was on the ground at this place 4 hours later and saw about 200 Sand Martins indulging in aerial skirmishes, none estimated at above half this height
00		Breeds on near by hills to north

Species.	No.	Date	Local time	Place
Rook (<i>Corvus frugilegus</i>)	5	17.11.52	1040	Wallasey, Cheshire.
	30	23.3.53	1215	Nauen, 22 miles WNW of Berlin, Germany.
	2	29.12.53	1113	Havelberg, 60 miles NW of Berlin, Germany.
	80	18.3.54	1215	12 miles NW of Brunswick, Germany.
	150	18.3.54	1227	12 miles NE of Helmstedt, Germany.
	14	31.3.54	1847	Turnhouse Airfield, Edinburgh.
Meadow Pipit (<i>Anthus pratensis</i>)	1	27.9.52	0820	25 miles SE of Castletown, I.O.M.
	6	8.10.53	1018	Brunswick, Germany.
Starling (<i>Sturnus vulgaris</i>)	30	23.10.50	0840	Wallasey, Cheshire.
	30	23.10.50	0843	Ellesmere Port, Cheshire.
	15	26.10.51	—	Altrincham, Cheshire.

remote background of clear sky, cloud or ground, there being no obstruction between aircraft and bird. Inevitably large birds and flocks of birds are more readily seen than small single birds. The former may be detected thousands of feet vertically and horizontally from the aircraft and are in sight for possibly eight to ten seconds; the latter are usually detected only a few feet from the aircraft and seen for as little as one to two seconds, being rapidly lost as they are left astern. Smaller birds must often pass unnoticed at ranges at which larger ones are seen. As many birds, e.g. Lapwing (*Vanellus vanellus*) and Swift (*Apus apus*), possess flight characteristics which enable split-second recognition to be made, I have only thrice seen birds too late for identification. On about a dozen other occasions exact specific identification has been impossible in such high-speed "field" work. In the case only of the Meadow Pipit (*Anthus pratensis*) have the area and season been taken into account to rule out other similar species.

The rapidly changing angle and range, especially of the smaller species, is an unusual feature of this type of observation but experience has enabled me to concentrate on the bird. The ability to re-focus ones eyes from wide scanning of the skies on normal look-out down to close range attention to detail involves conscious effort, but this is constantly being met with in ordinary field work, if to a lesser extent.

The need to consider each case on its own merits was well

Alt and heading estimated height in (heading not always known)	Weather (Cloud heights in feet) (Wind direction in degrees from true north)	Remarks.
N	Light smoke haze Wind 020/15 kts.	
E	Fine. No cloud Wind 300/10 kts.	Aircraft at 2,500 ft.
N	6/8 Strato-cumulus, tops 3,200 Wind 340/25 kts.	Birds far below aircraft (at 5,500 ft.) but flying above cloud tops
SE	8/8 Stratus, base 400, tops 1,200 Wind 270/15 kts. No upper cloud	Aircraft at 3,500 ft.
SE	As above but tops 1,500	As above
Circling	Dull, smoke haze	Dusk. Presumed roosting flight
SW	8/8 Nimbo-stratus, base 1,100 Wind 310/25 kts. Squally	
	3/8 Cumulus, base 2,200 Wind light and variable	
SE	8/8 Stratus, base 900, tops 2,000 8/8 medium cloud above Wind 180/20 kts.	Birds seen climbing out of the top of the Stratus cloud and continue climbing to SE.

illustrated in regard to the Coot (*Fulica atra*); they were most difficult to identify, not due to any inherent peculiarity or similarity to other species but simply to the fact that they seemed so utterly out of their element at 1500 feet; I cannot ever recall having seen Coot flying before except on a prolonged scutter along the surface.

HEIGHT

All heights given are indicated heights above mean sea level, all but six of the observations being over sea, coast or flat ground of less than 300 feet above M.S.L. Where, however, the height of the bird is less than four times the height of the ground immediately below it, then the height of the ground is given. Where observed heights have been assessed as differing by more than two hundred feet from the height of the aircraft, the height of the aircraft is given.

The indicated height of the aircraft is taken from the aircraft's altimeter, which, being an aneroid barometer calibrated to record changes of atmospheric pressure in terms of feet of height, is subject to three errors. These are (a) mechanical instrument error (b) errors due to variations in barometric pressure at sea level (c) errors due to differences between the actual temperature at any given height and that assumed in the Standard Atmosphere. However it is unlikely that these errors are additive to greater than 5% of the indicated height and are often much smaller.

DISCUSSION

While so few observations can only be a slight indication of the heights at which birds fly, their very scarcity suggests that any height greater than 500 feet above ground level is infrequent. There is no rapid fall off in the number of observations below the 2000 foot level, the number of observations (as distinct from the number of birds) in 500 foot levels from 500 feet up being:—

500'	1000'	1500'	2000'	2500'	3000'	3500'	4000'	4500'	5000'
17	18	10	5	5	4	2	3	0	0
		5500'	6000'	6500'	7000'	7500'	8000'		
		0	1	0	0	0	1		

The last is for the level 8000-8499 feet. The largest group of 18 includes several observations 1000 feet above some low-lying air-fields, this height often being held in their vicinity. However, as the greater part of my flying time even on short journeys is spent at cruising heights between 2,500 feet and 10,000 feet, only a very small proportion of time is spent at the heights having most observations, except in the one layer indicated above. Were it therefore possible to record accurately the number of observations per 500-foot layer per unit number of flying hours spent within each layer the lower layers would undoubtedly show a much higher frequency of observations.

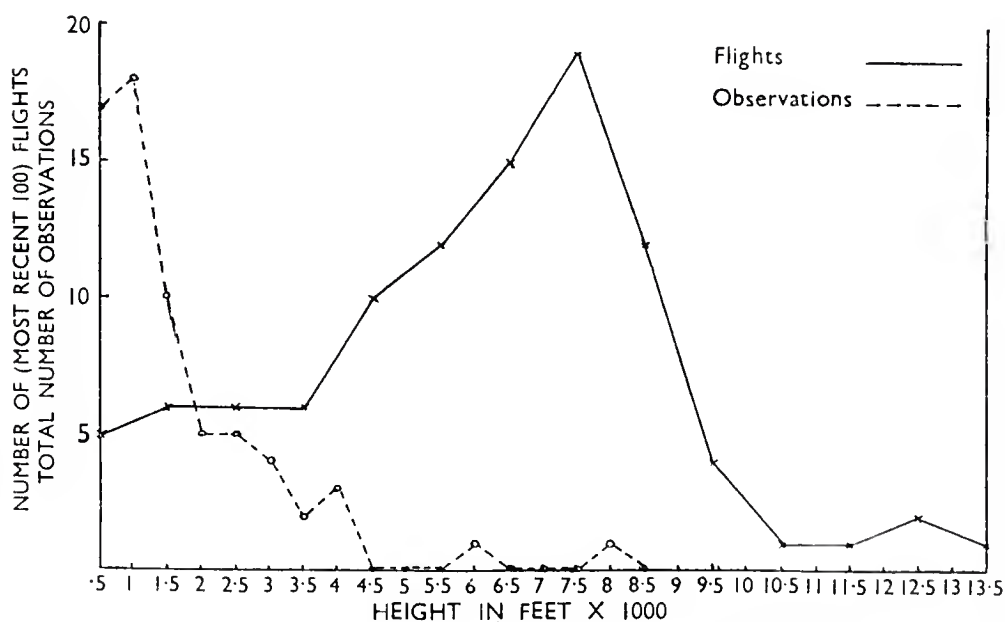


FIG. 1.—CRUISING HEIGHTS AND HEIGHTS OF OBSERVATIONS

The numbers of observations of birds at different heights is shown in relation to the amount of flying time spent at different altitudes.

Fig. 1 shows the number of observations in five-hundred foot levels quoted above together with the cruising heights of my most recent one hundred flights and indicates the paucity of birds at these heights. Unfortunately the number of bird observations (four) during these last hundred flights are too few to be plotted against the flights and I have no record of cruising heights to cover previous flights. However these hundred may be taken as a fair sample of the last twenty-two months during which over half of the total observations have been made. Cruising heights are usually in multiples of 500 feet, but as the hundred flights cover twenty-six levels an erratic graph would result from plotting them thus (e.g. 13 flights at 6000 feet and 17 at 7000 feet yet only 2 at 6500 feet) and would destroy the "time at each flight level" which the graph tries to convey. The flights have therefore been plotted in thousand foot levels and are thus strictly not on quite the same axis as the observations. Table II shows the same data reduced to percentages in three height-groups and again illustrates the rarity of high flying by birds.

TABLE II—PERCENTAGES OF BIRD OBSERVATIONS AT DIFFERENT CRUISING HEIGHTS

Height	% of last 100 flights cruising therein	% of total bird observations
Below 2000'	11	68
2000'-4500'	22	29
Above 4500'	67	3
	<hr/> 100	<hr/> 100

Few of my colleagues ever see birds in flight though among the observations of which I have heard there have been two at about 10,000 feet, one at 7,500 and one at 5,500 feet—the last two being of geese. Inability of my colleagues accurately to identify birds seen has led to the exclusion of all but personal observations.

I have no experience of flying in the Middle or Far East, where it is possible that, with a large number of birds of prey dependent on thermals for obtaining height, heights of 3000 feet or more may not be uncommon. Indeed it is possible that this paper may bring forth a number of observations from other pilots which may radically change the tentative indications outlined above.

As my work has a summer seasonal bias no direct significance can be drawn from the monthly distribution of observations, which is however as follows:—

Jan.	Feb.	Mar.	Apr.	May	Jun.	Jly.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2	9	8	1	3	14	7	6	9	2	3

Peaks are shown in March-April, July and October. If however an admittedly arbitrary system is adopted to eliminate local, roosting, feeding or other circuitous flight (excluding birds such

as Buzzard (*Buteo buteo*) which migrate thus), the monthly distribution of significant flights where the birds appear to be flying purposefully e.g. above cloud, in flocks on a definite heading, or over the sea or in adverse weather, then the distribution becomes:—

Jan.	Feb.	Mar.	Apr.	May	Jun.	Jly.	Aug.	Sept.	Oct.	Nov.	Dec.
0	2	6	2	0	1	0	0	1	8	1	3

Thus there are clear peaks in March and October. The June record of Lapwing is peculiar among these as the only one during the summer months of May to August.

Certain days have yielded more than one observation up to a maximum of five on one day. Reports from other pilots have also often occurred on a day when I have myself seen something. Thus 25 observations have fallen on ten days. However though some of these ten days have been days of light wind, associated with anticyclonic conditions with perhaps part cover of strato-cumulus cloud, on innumerable other occasions similar conditions at all seasons of the year have produced nothing. Such conditions, providing one is above the haze and/or cloud layer, are so ideal for search with practically unlimited visibility that any slight increase of observations need signify nothing.

The local times of occurrence of the observations have been noted on fifty-four occasions. Though I do fly at all hours of the day and night, these are not evenly distributed: as a result the times do not give a true indication of the incidence of activity. It may be noted, however, that I have only one record for the hour 0530-0630, one for 0730-0830 and two for 1830-1930. All other hours between these last two have three, four or five records each except 0830-0930 and 1230-1330 with seven each and 1430-1530 with eight. Of the twenty-four migrationally significant records previously mentioned, five were for 1430-1530, with all but three of the remaining seventeen timed records being spread almost equally between 0830-1230.

The heading of a bird is in many cases inconsequential, e.g. Skylark (*Alauda arvensis*) hovering in song. Also I have often found it possible to see and identify birds yet not be sure of their heading, all effort being devoted to recognition, the rapidly changing "angle off" during the few seconds the bird is visible tending to baffle accurate orientation. As a result there are relatively few data to assess direction of birds in relation to wind speed and direction.

However, in seventeen cases the heading of the birds and the wind at the height at which they were flying have been noted; these show three cases with birds flying with a head-wind; one with the wind on the starboard bow; one on the starboard beam and three on the starboard quarter: three had a tail-wind; two a wind on their port quarter and one a wind on the port bow. In three other

cases the wind was light and variable at the time. Thus these observations, which would fall within the category of "high" for a ground observer show a slight bias in favour of birds flying high with tail-wind components.

Of seven cases of birds flying below three-fourths or more cloud-cover, five lacked adequate data, one was flying with a wind 30° aft of the beam, and the other with a beam wind. This last bird was a Meadow Pipit heading S.W. with a N.W. wind of a speed approximately equal to its own airspeed: thus the bird must have been tracking almost due south with a slightly increased ground-speed over airspeed. This is my only case of a bird being airborne at a time when its airspeed equalled or was less than the wind speed.

Of the four records of birds flying above three-fourths or more cloud cover, one was almost directly into wind, one was running with the wind and the other two had the wind on their starboard quarter.

Of the two cases of birds flying between layers of cloud each more than three-fourths cover, data are available for one—birds flying with the wind on their starboard bow. This case is also the only one where birds were seen to emerge from cloud climbing.

It may be noted that large birds which gain lift from thermals have been seen almost exclusively on fine days with light and variable winds and have been either at or just below the top of the haze layer or cloud base; thus they have not sought to gain height above that offered through almost effortless soaring in the currents of rising warm air.

Of the gulls, only the Herring Gull (*Larus argentatus*) has been observed twice well clear of land. Of land-birds only the Meadow Pipit has been seen well over the sea. Lapwings, however, have twice been seen on a sea crossing—in both cases the Irish Sea.

The large rise in the number of observations in 1953 and 1954 together with a complete dearth of recorded observations prior to 1948 is remarkable. However, much of my service flying was over the sea with a greater proportion by night. Most of my flying thereafter until the end of 1952 was over the United Kingdom with much cross-channel (Irish Sea) work. Since then a larger proportion has been over the European continental land-mass. It would thus appear that even over short sea crossings birds are less inclined to fly high than over quite flat but large land-masses.

CONCLUSION

Over the United Kingdom and to a lesser extent over Western Europe the observations indicate that there is little flight by birds at heights of five hundred feet or above, birds being encountered on an average once in every seventy hours of flying by daylight.

On observations covering a variety of species engaged in various

pursuits no clear-cut pattern in relation to such factors as wind, weather or season is discernible.

Many more observations are required over a wider area to evaluate the incidence of high flying by birds.

ACKNOWLEDGEMENT

The author is indebted to Dr. David Lack for kindly advice and criticism during preparation of this paper.

SUMMARY

1. Observations on birds seen from aircraft are given.
2. The problems associated with observing and identifying birds are discussed.
3. The observations are assessed in relation to cruising height, time of year and day, wind direction and cloud amount.
4. In conclusion the need is expressed for further work of this kind.

NUTHATCH ROOSTING TIMES IN RELATION TO LIGHT AS MEASURED WITH A PHOTOMETER

By M. C. RADFORD

DURING the winter of 1953-54 one of a pair of Nuthatches (*Sitta europæa*) roosted regularly in a nesting-box in our garden at Oxford, as it did during the previous winter (*cf.* Radford, 1954). The sexes were again readily distinguished since the male had a much more marked red on the flanks and as before it was only the female that roosted in the box. She started on November 7th, 1953, and continued steadily until March 21st, 1954, when she began taking pieces of bark into the box and stopped roosting.

From November 11th I had the use of a photometer kindly lent by the British Trust for Ornithology. It proved to be of little use in the mornings as the Nuthatch got up with great regularity close to the time of sunrise when the light was so dim as to give photometer readings usually below 1. At this level the instrument is not very reliable and the differences were too slight to be of value.

The evening results were, however, very interesting and I took readings at the moment of roosting on as many occasions as possible throughout the winter. They were all taken at the same window facing W.S.W. and looking on to the nesting-box at one side. There were no trees in front of the window. Brief notes were also made of the type of evening (mild, cold, wet, foggy, snow, etc.). The accompanying tables give the results:

Date	Sunset (p.m. G.M.T.)	Time of roosting (p.m. G.M.T.)	Photometer reading	Weather
Nov. 11	4.17	3.45	4.5	Overcast, mild.
12		4.5	2.4	Cloudy, mild.
13		3.45	2.8	Raining, mild.
14		4.0	2.8	Cloudy, mild.
15		3.55	4.0	Light cloud, mild.
16		4.12	8.5	Clear, mild.
17		4.5	2.8	Foggy, mild.
18	4.10	4.5	0.8	Misty, overcast, mild.
20		3.45	3.0	Light cloud, mild
21		3.50	2.4	Cloudy, mild.
22		3.45	2.4	Cloudy, mild.
23		3.50	4.5	Light cloud, mild.
25	4.0	3.55	5.0	Clear, mild.
26		3.50	6.0	Clear, mild.
27		3.42	3.2	Overcast, mild.
28		3.55	1.6	Overcast, mild.
29		3.40	1.0	Misty, dark, mild.
30		4.0	3.2	Clear, mild.

Date	Sunset (p.m. G.M.T.)	Time of roosting (p.m. G.M.T.)	Photometer reading	Weather
Dec. 1		4.5	2.0	Light cloud, mild.
2	3.55	3.55	3.0	Light cloud, mild.
3		3.50	0.8	Overcast, mild.
4		3.35	0.4	Overcast, mild.
6		3.50	3.8	Light cloud, mild.
7		4.0	0.8	Cloudy, mild.
8		3.45	0.8	Cloudy, mild.
9	3.50	3.30	1.8	Foggy, mild.
10		3.50	1.0	Cloudy, mild.
11		3.45	1.8	Cloudy, mild.
13		3.48	2.0	Cloudy, mild.
14		3.45	0.4	Very dark, mild.
15		3.50	2.0	Foggy, cold.
16	3.49	4.0	0.8	Almost clear, mild.
17		3.55	3.0	Clear, mild.
18		4.0	0.4	Misty, mild.
20		3.50	3.0	Clear, cold.
22		3.58	0.8	Dark, mild.
23	3.55	3.50	0.8	Dark, mild.
24		3.45	36.0	Clear, sunny, mild.
25		3.55	8.0	Clear, sunny, mild.
26		after 4.0	less than 0.5	Dark, mild.
27-31	Not seen			
Jan. 1		4.20	less than 0.2	Frost, clear.
2				
3	4.0			
4		4.5	13.0	Cold, clear.
5		4.0	0.8	Cold, dark.
7		4.5	11.0	Snow, clear.
10	4.10			
11		4.5	1.5	Light cloud, mild.
13		4.15	0.2	Very dark, mild.
15		4.5	36.0	Clear, bright, mild.
17	4.20	4.20	25.0	Clear, bright, cold.
18		4.10	4.5	Light cloud, cold.
19		3.50	25.0	Sunny in W., mild.
20		4.5	3.2	Dark, mild.
21		4.0	2.0	Wet, mild.
22		4.10	4.5	Cloudy, mild.
23		4.30	3.2	Clear, mild.
24	4.30			
25		4.15	4.5	Cloudy, cold.
31	4.45			
Feb. 1		4.20	36.0	Snow on ground.
3		4.15	100.0	Snow on ground, sunny
4		4.15	100.0	Snow on ground, sunny
5		4.35	50.0	Snow on ground, sunny
7	4.55	4.35	50.0	Thaw, clear.
9		4.15	4.5	Misty, mild.
11		4.35	4.5	Misty, mild.
12		4.25	3.2	Wet, mild.
14	5.10	4.55	5.0	Light cloud, mild.
15		4.55	4.0	Light cloud, mild.



Niall Rankin

SABINE'S GULL (*Nema sabini*) ON THE NEST, ALASKA, 1950

This gives some indication of the forked tail and of the black outer primaries with their white tips. The secondaries and inner primaries are white, forming on the extended wing a large white triangle which is represented in the folded wing by the white line beneath the pale grey of the coverts and mantle. (see page 75)



Niall Rankin

SABINE'S GULL (*Xema sabini*) AT THE NEST, ALASKA, 1950

The slate-grey hood is separated from the white of the neck by a narrow border of black; both this and the black-based, yellow-tipped bill are well shown here. The nest is a slight hollow of stalks and grass, usually on marshy ground, and the eggs vary from brown to olive-green marked with darker brown. (see page 75)



G. des Forges

LESSER YELLOWLEGS (*Tringa flavipes*) AT FARLINGTON MARSHES, HAMPSHIRE

SEPTEMBER 1954

This shows more exactly the depth of colour on the mantle which appears much too black in plate 12, but on the other hand it does not emphasize the slender gracefulness of the bird. Note the fine spotting on the mantle and wings and the barred tail. This species is much greyer above than the Redshank, and whiter below



C. W. G. Paulson

LESSER YELLOWLEGS (*Tringa flavipes*) AT FARLINGTON MARSHES, HAMPSHIRE
SEPTEMBER 1951

The very long legs and the slender build which characterize the species are well shown here, but the mantle appears rather darker than was actually the case. Note the black bill, fine and not very long. Details of this record and of the other Yellowlegs seen in Britain in 1953 and 1954 will be published shortly.

Date	Sunset (p.m. G.M.T.)	Time of roosting (p.m. G.M.T.)	Photometer reading	Weather
Feb. 16		4.50	7.0	Cloudy.
18		4.45	2.0	Wet, mild.
19		4.15	? 2	Wet, very dark, mild.
20		4.55	50.0	Clear, sunny, mild.
21	5.25			
22		4.35	8.0	Light cloud, mild.
23		4.45	100.0	Sunny, mild.
25		4.45	6.0	Overcast, mild.
26		4.45	120	Sunny, mild.
28	5.35	4.50	25	Snow showers, cold.
Mar. 1	5.40	4.50	6.5	Snow showers.
2		4.45	10.0	Cloudy, cold.
3		4.55	9.0	Light cloud, mild
5		5.5	120.0	Sunny, cold.
6		5.10	7.0	Light cloud, mild.
7	5.50	5.10	100.0	Sunny, mild.
8		5.30	15.0	Cloud after warm day.
9		5.15	9.0	Cloudy, mild.
11		5.40	20.0	Clear, mild.
12		5.50	15.0	Clear, mild.
13		5.5	2.0	Overcast, cold N.E. wind.
	6.0			
15		5.5	4.5	Cold, N.E. wind.
16		5.40	40.0	Cold, N.E. wind.
19		5.30	6.5	Wet, mild.
20		5.55	4.0	Cloudy, mild.
21		5.50	4.5	Cloudy, mild.

Stopped roosting.

I had expected to find the time of roosting varying with the light and during November—a mild month, never very light—there seemed some suggestion of this. For instance, the latest time recorded, 4.12 p.m. on the 16th, was also the lightest evening, 8.5. But on the 17th and 18th she went to roost at 4.5 p.m. both days, with readings of 2.8 and 0.8 respectively.

In December there was more variation in the light and there seemed to be no relation between these variations and the time of roosting. The earliest time, 3.30 p.m. on the 9th had a light reading of 1.8, while the latest, 4.5 p.m. on the 1st, had a reading of 2.0. But on the 8th, 11th, 14th, and 24th she roosted at 3.45 p.m. with light readings of 0.8, 1.8, 0.4 and 36.0 respectively.

In January, February and March the light variations became far more marked and there seemed to be complete absence of any connection between the time of roosting and the amount of light. For instance, in January she roosted at 4.5 p.m. on the 4th, 7th, 11th, 15th and 20th and the light readings were respectively 13.0, 11.0, 1.5, 36.0 and 3.2. Again, on the 1st she roosted at 4.20 p.m. with a light reading of less than 0.5, and at 4.20 p.m. on the 17th with a reading of 25.0. In February she roosted at 4.15 p.m.

on the 3rd, 4th and 19th with a light reading of 100.0 on the 3rd and 4th and less than 0.5 on the 19th. Similarly, she went in at 4.45 p.m. on the 23rd, 25th and 26th with light readings of 100.0, 6.0, and 120.0 respectively. The same holds good in March, for she roosted at 5.5 p.m. on the 5th, 13th and 15th with readings of 120.0, 2.0, and 4.5 respectively.

As far as I can judge from these figures there is no doubt that light does not affect the hour at which the Nuthatch roosts.

In the previous year I could not find that temperature affected the time of roosting and the same thing was shown this year. In November and December the weather was on the whole very mild and the question of variation in temperature hardly arose, but in January and February there was much more variety. On January 1st and 4th there was frost and the roosting times were 4.20 p.m. and 4.5 p.m. respectively. On the 7th, when it was snowing, the time was again 4.5 p.m. But it was also 4.5 p.m. on the 11th, 15th and 20th all of which I noted as being mild. On February 1st, 3rd, 4th and 5th there was snow on the ground and the times of roosting were 4.20 p.m., 4.15 p.m., 4.15 p.m. and 4.35 p.m. respectively. On the 7th it was thawing and the time was again 4.35 p.m. The same absence of any relation was shown in March.

These observations do, however, suggest that the bird roosts earlier in relation to sunset in February and March than in November and December. This is the same as was found by Dunnett and Hinde with captive Great Tits. Possibly this is a question of the time required for getting the necessary food.

REFERENCES

DUNNETT, G. E., AND HINDE, R. A. (1953): "The winter roosting and awakening behaviour of captive Great Tits." *Brit. Journ. of Anim. Behaviour*, 1: 91-95.

RADFORD, M. C. (1954): "Notes on the winter roosting and behaviour of a pair of Nuthatches." *Brit Birds*, xlvii: 166-168.

PHOTOGRAPHIC STUDIES OF SOME LESS FAMILIAR BIRDS

LXIII. SABINE'S GULL

Photographed by NIALL RANKIN

(Plates 9-10)

SABINE'S GULL (*Xema sabini*) is an Arctic-nesting species breeding on low-lying marshy ground in tundra regions. It is not a common bird anywhere in its range, but the main breeding areas are in Arctic Canada, Baffin Island, and N.W. Greenland; Arctic Siberia, from the Taimyr Peninsular eastwards; and Alaska, where Col. Rankin's fine photographs were taken. It is a rather more irregular nester in other parts of the Arctic circle, including Spitsbergen. Large colonies are not usually found. Instead, small scattered groups of nests occur often in close proximity to colonies of Arctic Terns (*Sterna macrura*). The nest (shown in plate 10) is a slight affair of grasses in a shallow hollow, and the usual clutch is of two to three eggs, as is typical with gulls.

The exact extent of the winter range is far from well known, perhaps partly because Sabine's is one of the gulls that do not much visit land at this season. J. Fisher and R. M. Lockley (*Sea-Birds*, 1953, p. 237) say that it winters "somewhat mysteriously on the Pacific coasts of North and South America, and on the North Atlantic coasts the main wintering place of the Atlantic population is not properly known, though it may well be largely in the Gulf of Gascony (in the Bay of Biscay) whether the Bay of Biscay really is a wintering place remains to be proved; if it is, the birds seem to start their return passage early, before Christmas (as many petrels do), and nobody knows where this passage takes place." It is an occasional autumn visitor to other coasts in western Europe, and three recent British records are given on pages 83-84. In September 1950 (*antea*, vol. xlv, pp. 254-256 and 420-421) no less than three adults and ten immature birds were recorded in different parts of England and Wales. Late winter and spring records are extremely scarce, however, and it is not really understood what happens to the Sabine's Gull during this period and before it arrives on its breeding-grounds in late May.

Like the other gulls found only in the high North—Ivory (*Pagophila eburnea*) and Ross's (*Rhodostethia rosea*)—Sabine's Gull is a graceful and tern-like creature, with a light, buoyant flight. In fact, it is probably the most tern-like of all the gulls, and has rather a tern-like cry. In the fashion of the marsh terns

it feeds largely from the surface of the water. The characteristic features of the plumage of this species are well shown in these photographs. This is the only gull with a clearly forked tail, and plate 9 gives some indication of this. Plate 10 shows particularly well the form of the slate-grey hood separated from the white of the neck by a narrow black collar; in winter this hood is lost, and the head is white with dusky on the sides. The outer primaries are black up to the carpal joint, except for the white tips (not subterminal mirrors) which produce in the folded wing a regular series of white patches on a black ground—well shown in both plates 9 and 10. The inner primaries and secondaries are white, and this produces a characteristic flight pattern of a broad white triangle behind the black of the primaries and the pale grey of the rest of the wing. The short, yellow-tipped, black-based bill is well illustrated in both plates.

I.J.F.-L.

THE BEHAVIOUR OF A PAIR OF GREAT TITS AT THE NEST

By MONICA M. BETTS

(*Edward Grey Institute, Oxford*)

IN 1951, a pair of Great Tits (*Parus major*) nested in a specially constructed observation nest-box attached to a wooden hide situated in oak woodland in the Forest of Dean, Gloucestershire. The box was illuminated by a window in the roof, and backed by a plain glass window, so that the observer could watch the nest from a distance of about nine inches.

Seven young hatched on May 30th and the remaining two on May 31st; all nine left the nest on June 18th between 0600 and 0700 hours G.M.T. During the nestling period the box was under observation for an average time of over six hours per day, the times of watching being varied daily.

THE SHARE OF THE SEXES IN FEEDING THE YOUNG

The proportion of the feeding visits by the female averaged about 28% in the first five days during which brooding was still necessary, after which it increased until by the ninth day it was over 50% of the total, and by the nineteenth day 91% of the total. On the last morning, however, the visits of the male became more frequent, and the female's share dropped to 76%.

It is possible that the share of the sexes in feeding the young varies individually, and it may also depend on the occurrence of a second brood. Kluijver (1950), studying two Great Tit nests, found that the female's share increased steadily to *ca.* 60%. Hinde (1952) obtained similar results for this species, although at one nest the male continued to do most of the feeding of the young during the whole period, and the female's share never exceeded 24%.

The number of visits to the nest may not give a true indication of the share of each parent in feeding the young if the sexes differ in the number of food items brought on each visit. For example, at this nest, both birds often brought several items at once, but the male brought more than one item much more frequently than did the female. Excluding feeds of grit and snail (which were always shared between several young), the female brought two items at once in 10% of her visits, and three or more items together in 1% of her visits. The male, however, brought two items in 29% of his visits, and three or more items in 10%. Only occasionally were four, five or six food items brought at once. The frequency with which the male brought several items at once was greater during the first half of the nestling period, whereas in the case of the female this frequency increased as the young grew older.

THE RATE OF FEEDING

The rate of feeding was calculated from the average number of food items brought to the young per hour of observation time. This feeding-rate was often higher than the visiting frequency, due to the parents' bringing several items at one visit. The results are shown in Fig. 1.

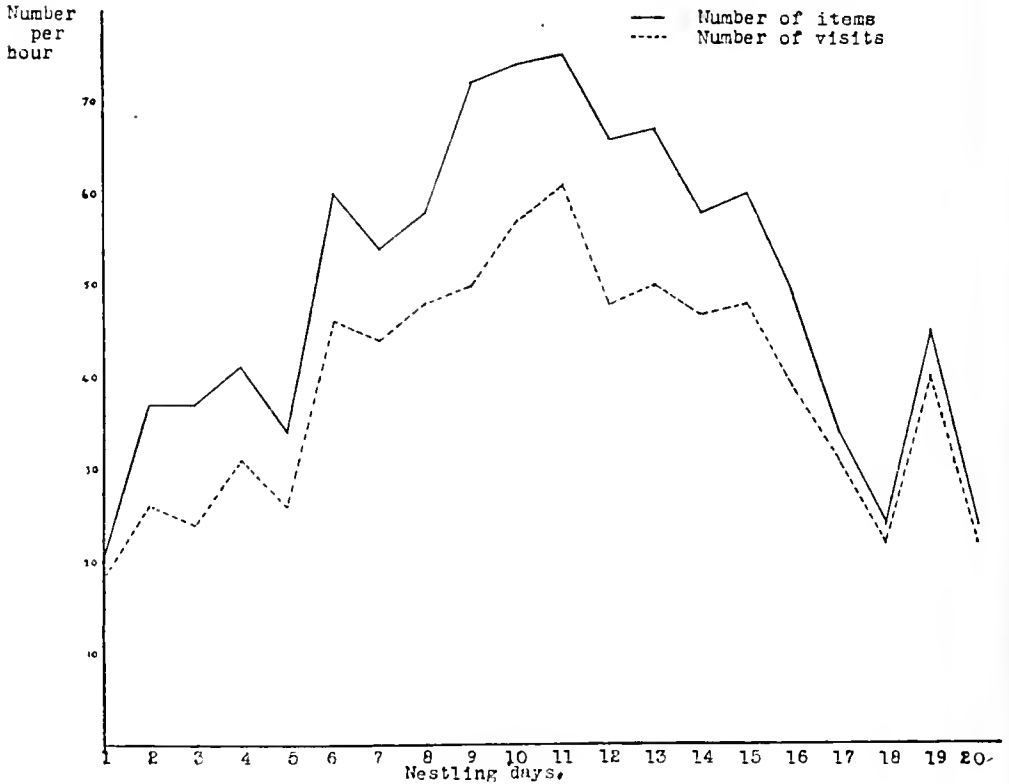


FIG. 1.—THE RATE OF FEEDING OF A BROOD OF GREAT TITS (*Parus major*)

The drop in the feeding-rate on the fifth day was probably due to the time of observation, which on this day was restricted to a cool morning, when the female was brooding for nearly half the time. The peak in the number of items brought per hour, and also in the number of visits, came on the eleventh day. After this time the feeding-rate dropped fairly steadily until the nineteenth day when it increased suddenly, dropping again on the last morning to only one third of the rate at the peak time. The slower feeding-rate towards the end of the nestling period is not necessarily correlated with any drop in the volume of food brought to the young, for the items were larger in the later than in the earlier part of the period. It is interesting to note that the rise in the feeding-rate on the nineteenth day corresponded with an increase in the proportion

of smaller food items in the diet on this day. The general pattern and frequency of the visits are similar to those found by Gibb (1950) for first broods of the Great Tit in mixed woodland.

In a total of 4,727 feeding visits 22% were visits with two or more items. The habit of bringing several items at one visit was also observed at the nest of a pair of Blue Tits (*P. caeruleus*) in the Dean Forest, and at several nests of titmice in a mixed wood in Berkshire in other years. Hence the use of automatic recorders to compare visiting frequencies at different nests does not necessarily give a true picture of the feeding activity at these nests.

NEST SANITATION

The female Great Tit was seen eating the shells of two eggs which hatched while the box was under observation. This habit has been recorded in the Marsh Tit (*P. palustris*) by Steinfatt (1938), but the Nethersole-Thompsons (1942) state that the British titmice usually carry the egg-shells from the nest.

During the hours of observation each young bird defecated on the average once every 100 minutes, and there was little variation in this rate with the growth of the young. In the first four days most of the faecal sacs were swallowed by the adult which had fed the young. The sacs were carried from the nest on 4 out of 45 occasions on the third day, and were regularly carried away after the fifth day. (See Hinde, 1952).

As described by Heinroth (1924-26), the young bird elevates the cloaca when defecating, so that the sac protrudes above the heads of the other nestlings. On several occasions the parent pecked the cloaca of the young when no faecal sac was produced, and it frequently waited for some seconds after the feed, watching the young, and presumably waiting for the production of a faecal sac. On six occasions when a sac was produced before a beak-full of several items had been shared out, the adult itself swallowed the rest of the food and then carried the faeces from the nest. Twice in these circumstances, the adult carried away the faecal sac while retaining the food in its beak, and then returned to complete the feed. This was also observed at a Blue Tit's nest in 1950, and it suggests that the drive to keep the nest clean may be greater than the drive to feed the young.

The female spent an average time of two minutes in every observed hour in cleaning the nest. This activity entailed probing the lining of the nest with the beak, and hunting in the bottom of the nest beneath the young. Small particles of chitin and debris were eaten, and the activity is probably a safeguard against the presence of parasites; it also prevents the young from becoming entangled in the nest-lining. Nest-cleaning was not observed after the eighteenth day. Similar nest-cleaning behaviour by the female Blue Tit has been described by Pullen (1945).

THE TIME SPENT BY THE FEMALE IN BROODING THE YOUNG

The average time spent by the female in brooding the young during the hours of observation is shown in Table I. Brooding was more prevalent in the early morning (dawn to 0800 hours G.M.T.), when the temperature was lower, than later in the day. Brooding during the day became progressively less frequent as the young grew older, until after the seventh day it ceased, although the female continued to sleep on the nest at night for most of the period.

TABLE I—THE AVERAGE TIME SPENT BROODING BY THE FEMALE
GREAT TIT (*Parus major*)

Day	A. Time spent brooding from first feed of day to 0800 hours G.M.T.		B. Timespentbroodingfrom 0800 hours G.M.T. to last feed of day.	
	Total hours of observation	Percentage of time spent brooding	Total hours of observation	Percentage of time spent brooding
1	—	—	3.0	63
2	—	—	7.6	53
3	3.3	62	6.1	33
4	2.5	57	5.5	17
5	4.0	52	—	—
6	2.2	35	2.3	7
7	3.5	28	6.3	5

THE TIMES OF THE AWAKENING AND ROOSTING OF THE ADULTS

As the female roosted in the box until the nineteenth night it was possible to record her awakening and roosting times on some days. Data were also collected on the times of the first and last visits to the nest by the male. The average length of time between the first and last feeds of the day was about 16 hours. Table II shows that up to the time when the young were half grown, the female left the box before sunrise, after which she emerged progressively later. On the mornings of June 15th and 16th the female left the box as the observer entered the hide some 20 minutes before sunrise, and this disturbance may also have affected the time of her first feeding visit. The roosting time of the female varied from 68 to 11 minutes before sunset.

The male emerged earlier than the female, who normally did not leave the nest-box until he arrived there. For the first few days the male continued to feed the young after the female had entered the box for the night, but from the eighth day he ceased feeding the young at a progressively earlier time, and by the nineteenth evening his last visit was 60 minutes earlier than the last visit by the female.

TABLE II—THE TIMES OF AWAKENING AND ROOSTING OF THE ADULT
GREAT TITS (*Parus major*)

		Time in minutes before (—) or after (+) sunrise and sunset			
		Awakening of female	Roosting of female	First arrival of male	Last feed by male
May	30		—68		—51
	31		—64		—56
June	1	—6		—5	
	2		—58		—31
	3	—9	—13	—9	(before —20)
	4		—34		—21
	5	—9		—9	
	6		—45		—64
	7	(before —1)			
	8				
	9	—6		—6	
	10		—47		—48
	11	+2		+2	
	12		—65		—76
	13				
	14				
	15	+14*		+29	
	16	+26*	—11	+13	—46
	17		—27*		—87
	18	+18		+27	

* Time of first and last visits to nest

The figures for awakening and roosting times of the female are very similar to those obtained by Hinde (1952) for this species in the breeding season. Figures given by Kluijver (1950) for the adults of first broods of Great Tits in Holland, show that the female rose on the average 6 minutes before sunrise, some 31 minutes later than the male, while her roosting time varied from shortly before sunset to after sunset, getting later as the young grew older. It is not clear why female Great Tits in Holland should go to roost so much later in relation to sunset than members of the same species in this country.

ACKNOWLEDGEMENTS

The writer is indebted to Dr. David Lack for helpful advice in the preparation of this paper, and to Professor G. C. Varley and Dr. W. H. Thorpe who also read the manuscript.

SUMMARY

1. The share of the male Great Tit in feeding the young decreased steadily during the nestling period, except for an increase on the last morning.
2. The rate of feeding increased to a peak on the eleventh day and thereafter decreased, the fall being correlated with an increase in the size of the food items brought to the young. The visiting

frequency did not represent the true feeding rate as on 22% of all visits, two or more items were brought together.

3. The young Great Tits defecated about once per 100 minutes. The faecal sacs were usually eaten by the adults during the first four days, and carried from the nest by the adults after this time. The female spent about two minutes per hour in cleaning the nest.

4. During the first five days, the female brooded the young for an average of 57% of the time from dawn to 0800 hours G.M.T. The proportion dropped to 28% on the seventh morning and brooding ceased thereafter.

5. The female left the box before sunrise until the young were half grown, after which she emerged progressively later. The male was active rather earlier than the female. The female entered the box to roost from 11 to 68 minutes before sunset. The male's last visit to the nest was much earlier than the time of the female entering to roost, except during the first week. The average length of time between the first and last feeds of the day was 16 hours.

REFERENCES

GIBB, J. (1950): "The breeding biology of the Great and Blue Titmice." *Ibis*, 92: 507-539.

HEINROTH, O. AND M. (1924-26): *Die Vögel Mitteleuropas*. Berlin.

HINDE, R. A. (1952): "The behaviour of the Great Tit (*Parus major*) and some other related species." *Behaviour*, Supp. 11. Leiden.

KLUJVER, H. N. (1950): "Daily routines of the Great Tit, *Parus m. major* L.". *Ardea*, 38: 99-135.

NETHERSOLE-THOMPSON, C. AND D. (1942): "Egg shell disposal by birds." *Brit. Birds*, xxxv: 190-200.

PULLEN, N. D. (1945): "Feeding of Blue Tit nestlings." *Brit. Birds*, xxxviii: 205-210.

STEINFATT, O. (1938): "Das Brutleben der Sumpfmeise und einige Vergleiche mit dem Brutleben der anderen einheimischen Meisen." *Beiträge z. Fortpfl. Vögel*, 14: 84-89; 137-144.

NOTES

Sabine's Gull in Somerset.—From the end of the Old Pier at Weston-super-mare, Somerset, on 12th August 1954, we saw a small tern-like gull which appeared to have black primaries and a black leading edge to the wing. The bird flew very close to us—within six feet—and we had a clear view of the bill and legs. These latter were blackish, as also was the bill except for the tip which was a light colour later confirmed as yellow. The head was very dark grey, the mantle pale grey and the rump and tail were white. White secondaries formed a triangle on the rear part of the wing. We identified the bird as an adult Sabine's Gull (*Xema sabini*) in breeding plumage.

The bird continued to fly near the pier with about 30 Herring Gulls (*Larus argentatus*) for some time, occasionally seeming to feed off the surface of the water while in flight, and now and then sitting on the water for brief intervals. Later the bird flew out to sea, keeping just above the waves, and vanished out of sight, but then returned following a steamer in with a number of other gulls. Again it came very close to us, within a range of 10 to 20 feet, and we were able to obtain one good photograph.

H. R. H. LANCE and J. M. LANCE

[Mr. and Mrs. Lance have sent us a print of the photograph which clearly confirms the identification, though it is not good enough for reproduction.—EDS.]

Sabine's Gull near the Wolf Lighthouse, Cornwall.—While crossing from the Isles of Scilly to Penzance, Cornwall, in the S.S. "Scillonian" on 1st September 1954 I observed an adult Sabine's Gull (*Xema sabini*) fairly near the Wolf Lighthouse. The bird kept to a height of approximately fifteen feet above the sea, and from a distance looked small and rather tern-like, but as it made to cross close to the ship's bow such diagnostic characters as the deep black on much of the primaries extending up to and well beyond the carpal joint, and the conspicuous white triangular patch in the centre of the wing were sufficient to identify the species. The bill was dark and small; the head white with a noticeable smudge behind the eye; the mantle and rest of wing greyish; the tail wholly white. The bird was soon away flying strongly in a southerly direction and perhaps may have been making for the Scillies.

The writer has been fortunate in finding a juvenile Sabine's and the remains of another in recent years in Somerset (*antea*, vol. xlv, pp. 255-256; vol. xlvi, p. 189).

BERNARD KING

Sabine's Gull in the Isle of Wight.—From Warden Point, Isle of Wight, on 28th November 1954, I watched on several occasions

between 0930 hours and 1200 hours what I identified as a Sabine's Gull (*Xema sabini*) working the rough sea of Hurst Narrows. The bird was readily distinguished from other gulls by its buoyant, tern-like flight and striking wing pattern, in which the whole of the leading edge of the wing appeared dark, in strong contrast to the white secondaries. The primaries only were definitely black. No terminal tail-bar was present, but I could discern, at times, a dark nape. The Sabine's Gull dropped momentarily to the surface on a number of occasions but did not settle whilst under observation. Present for comparison were two adult Little Gulls (*Larus minutus*) and both adult and immature Kittiwakes (*Rissa tridactyla*) in addition to the commoner species of gulls. This would appear to be the second record for the Isle of Wight, for one was seen in Cowes Roads on 6th November 1905 by M.J. Nicoll (*Ibis*, Oct. 1906).
M. C. ADAMS

Baldpate in Dublin.—On 23rd and 27th February 1954 at the North Bull Bird Sanctuary, Dublin, I saw a pair of duck which were later identified from my description as Baldpates (*Anas americana*) by the Rev. P. G. Kennedy, S. J., and Major R. F. Rutledge. The birds were about the size of Wigeon (*A. penelope*) and their markings were like those of that species, though much washed with brown and with the following differences:—*Drake*: The forehead was practically white instead of warm buff; a noticeable band of dark feathers extended from the eye to the nape. The rest of the head was creamy buff (pale brownish buff at some angles), and noticeably pale on the cheeks and chin. The creamy buff area was entirely covered with small black spots. The rest of the body resembled a browner edition of a Wigeon drake, though there was distinctly less white on the wings. There was a region of black feathers about the tail. The breast was buffish, speckled with brown. *Duck*: Entire head creamy buff, overlaid with small black spots which were particularly noticeable on cheeks and chin.

At times I managed to get within thirty yards of the two birds. When first I saw them they were alone, but later they were with a flock of Wigeon from which they were easily distinguishable.

FRANK KING

Baldpate in Lanarkshire.—On 13th March 1954 on a rubbish dump pool at Hamilton, Lanarkshire, an adult male Baldpate (*Anas americana*) was seen swimming among Wigeon (*A. penelope*), Pochard (*Aythya ferina*), Goldeneye (*Bucephala clangula*) and Coot (*Fulica atra*). Subsequently it was seen by many people until 18th April, when it was last seen by H.M.-G. A very detailed description was compiled and has been sent to the Editors. This description differs in two points from *The Handbook*, but in each case other sources suggest that that work is wrong. Firstly, *The Handbook* says that *americana* and *penelope* are of the same

size, whereas our bird was larger. Mr. J. A. Anderson, who knows the bird in the field, says *americana* is usually larger. Peterson (*A Field Guide to the Birds*), Grinnel, Bryant and Stoker (*Game Birds of California*) and Phillips (*The Natural History of the Ducks*), all give a larger size for the Baldpate. According to Phillips, the bill-size is markedly greater, suggesting a heavier head, which we observed. Secondly, *The Handbook* and Peterson show a very pale face for *americana*. Our bird had a much darker face and Mr. Anderson agrees with this. The illustration by Allan Brooks in Taverner's *Birds of Canada* exactly resembles it in this particular. The pictures in Phillips, and Fitter and Richardson (*The Pocket Guide to British Birds*) also come very close indeed to our bird.

The bird may possibly be the same individual as that recorded from the same locality on 16th April 1952 (*Scot. Nat.*, vol. 65, p. 116). The species has been suspected of breeding in Iceland and it possibly may have become associated with a migratory flock of Wigeon from there.

D. G. ANDREW, G. FRAZER,
M. F. M. MEIKLEJOHN, H. MAYER-GROSS, R. W. T. SMITH and
C. WALKER

“Diving-play” of Smew in their winter quarters.—On 8th March 1953, at Blagdon Reservoir, Somerset, the writer observed a party of seven Smew (*Mergus albellus*); one of these was an adult male, the remainder being “red-heads”, of which two were thought to be young males. These birds were diving from a height of approximately three feet above the surface of the water and completely submerging for a few seconds. On re-surfacing they immediately took flight only to repeat, with quick rapidity, this interesting behaviour but always plunging in front of any of their companions who had already dived. The “diving-play” lasted about one minute then ceased as suddenly as it had started and finally reverted to normal splashing and diving from the surface.

The behaviour was very similar to the diving-play recorded for surface-feeding ducks (*antea*, vol. xli, p. 247; vol. xliii, pp. 19, 20) and in the writer's opinion is fairly common amongst parties of Mallard (*Anas platyrhynchos*), Teal (*A. crecca*), and Shoveler (*Spatula clypeata*) but no previous records can be traced of saw-billed ducks performing in this manner.

BERNARD KING

Probable Black Kite in Dorset.—On 9th May 1954, on Warcham Heath, Dorset, with J. R. Brock, R. J. Jackson and T. C. Pickering I saw a large hawk with a very long tail rise from on or near the ground on the edge of a plantation to the west of Great Ovens Hill.

The bird got up with very leisurely wing-beats and at first sight was taken for a female Montagu's Harrier (*Circus pygargus*). After rising from the ground the bird circled several times at some

height, soaring and sometimes flapping rather slowly. Once or twice it hovered with an action something like a Kestrel's (*Falco tinnunculus*), but it was noted that the long tail was not fanned or depressed and the wing-flapping was still very slow. The bird soared in a most effortless way and more than once appeared to stand stationary head into the wind, which was quite considerable, with no flapping or movement at all. On two occasions it dived steeply towards the ground. It was under observation for probably 5 to 10 minutes at ranges from 50 to 300 yards before it finally flew away. The following summary is made from notes written down immediately on return from the field:—

Size and shape: Length as Buzzard (*Buteo buteo*) but a much less bulky bird with *very* long tail and narrower wings. They were not however pointed as in a falcon and the bird never looked like a falcon. The tail was for the most part kept tightly closed—due probably to the wind—and was not noticed to be forked, but when spread it was noted that it appeared square at the end.

Colour: Upper-parts (wings and back) reddish brown. No very definite wing-pattern, but the wings were somewhat streaked and J.R.B. and R.J.J. noticed that the tips were darker than the rest of the wing. The tail appeared uniformly dark. No white on rump. Under-parts were brownish—not conspicuously marked. When the bird rose from the ground it was noticed that the under-wing showed pale.

The two most pronounced characters were the very long tail and the bird's great mastery of effortless soaring and controlled flight. It was clearly a bird I had not seen before. It was not a falcon (lacked characteristic silhouette), not a Buzzard, nor a Honey Buzzard (*Pernis apivorus*) (tail uniformly coloured); neither was it a harrier (uncharacteristic behaviour after first seen and lacked white on rump for Hen Harrier (*C. cyaneus*) or Montagu's Harrier) or an *Accipiter* (wings not broad enough). After consulting *The Handbook* and *A Field Guide to the Birds of Britain and Europe* I have come to the conclusion it was a Black Kite (*Milvus migrans*). I am not familiar with either of the kites, but the bird's behaviour seems to agree well with descriptions I have read. The forked tail could easily have been missed as nearly all the time the bird held it tightly closed.

ARTHUR BULL

[We consider that there is little doubt that this identification is correct, but in view of the fact that none of the observers has had any previous experience of kites, and one or two features seem abnormal, namely, the hovering and the tail kept closed even when the bird was soaring and gliding, we feel that it is best to treat it as a "probable", at least for the time being.—EDS.]

Unusual nesting-site of Moorhen.—On 24th May 1954 an empty nest of a Moorhen (*Gallinula chloropus*) was found 75 yards in from the entrance of a culvert which carries the Dengemarsh

Sewer underground to the sea, at the R.S.P.B. Reserve on Dungeness, Kent. The nest was on a wet, iron girder of a sluice-gate about one foot above water level and could be seen through a slit in the cover of an inspection pit about 15 feet above. The water was static and was 15 inches from the top centre of the roof of the tunnel. A clutch of eight eggs was completed on 2nd June, the first chick hatched on 23rd June and the nest was empty next day. A pair of Moorhens were frequently seen entering the culvert during the spring of 1953 and I am informed by Mr. H. Quick of the Kent River Board that Moorhens nested in the same site in 1952.

H. E. AXELL

Crane in Yorkshire.—On 5th April 1954 a bird was picked up dead on the beach at Auburn, south of Bridlington, Yorkshire, by R. Little, who brought it to me on the 7th for identification. It was a Crane (*Grus grus*) in first summer plumage. The skin was in too dishevelled a state for preservation, possibly due to the bird's having come down in the sea, or having struggled on the tide-line for some time before its death. It bore no rings or wing-tags, and so far as could be ascertained it had not escaped from captivity, though this cannot be ruled out. The shape of the bill was rather different from that of the Plates in *The Handbook*, and it also varied in colour. The tip of the bill was horn-coloured, greying towards the nostrils. From the nostrils to the base of the bill was red, with slight black markings on both mandibles. The forehead was covered with strong black bristle-like feathers extending to the eye. On the crown red skin was visible through short, strong bristles. As a result of this, the red area on the head was above the eye instead of much further back as in the figures shown in *The Handbook*.

G. J. BROWN

[Miss Phyllis Barclay-Smith told us at the time that she did not know of any collection in Yorkshire from which a Crane might have escaped, nor did she hear of the loss of a Crane from anywhere else. Mr. Brown kindly sent us a sketch of the head, which showed various differences from the Plate in *The Handbook*, but it was possible to find a number of similar birds among the specimens in the British Museum (Natural History).—EDS.]

Ringed Plover with apparently congenital deformity.—On 2nd September 1954 a Ringed Plover (*Charadrius hiaticula*) caught in a clap-net on the beach at Beadnell, Northumberland, was found to possess but one leg, the right. Of the left leg I could feel no trace whatever, no stump even internally on gentle palpation. The belly was perfectly rounded and no scar was visible on parting the feathers: the bird was well-nourished—as fat as butter!—and obviously perfectly fit. An X-ray was not practicable and the bird was ringed and released. The condition may possibly have been due to injury as a chick, exceptionally well-healed, but

as no trace of the limb was palpable, it would seem more probably to be a case of congenital absence of the left leg.

E. A. R. ENNION

Aberrant rump patterns in Ruff.—On 14th August 1954 Mr. A. J. Harthan and myself observed closely a small juvenile Reeve (*Philomachus pugnax*) feeding in a farmyard at Sheriff's Lench, Worcestershire. It was in normal plumage except that the entire upper tail-coverts and part of the lower rump were white, giving the impression of a broad white horseshoe above the tail instead of two oval white patches divided by a dark line. There was a dab of reddish at the extreme apex of the horseshoe, the only discolouration visible even at ranges under six feet.

I have since seen another young Ruff showing a similar pattern at Fosdyke, Lincolnshire, on 25th August 1954, and from correspondence with the Editors I understand that Mr. I. J. Ferguson-Lees saw two in 1949 and one in 1950, and Mr. P. A. D. Hollom one in 1954. I have also met others who have seen similar Ruffs and Reeves: most of the records seem to refer to young birds. It seems worth while to draw attention to this probably fairly frequent abnormality in view of the insistence of all literature on the oval patches divided by a dark line as an infallible field-character.

T. C. SMOUT

[I first saw one of these birds at Thorney Island, Sussex, on 2nd September 1949. It had the oval patches on the sides of the base of the tail elongated to form what was practically a perfect V across the tail. Another bird with it on 4th September showed the same characteristic, but less pronounced, so that the two patches of white were still just divided. Both these birds were juveniles, as was the bird in September 1950 at the same place, which had a tail pattern similar to the first of the 1949 birds.—

I.J.F.-L.]

Nesting of Herring Gulls on roof-tops in Dover.—In view of the statement in *The Handbook* that the Herring Gull (*Larus argentatus*) has nested "once on house-roof in Devon", it seems desirable to give greater prominence to the fact that a colony of these birds now breeds each year on roof-tops in Dover, Kent.

One or two pairs of Herring Gull nested on a roof-top at the entrance to the eastern harbour before 1939, and there was also one nest that I examined $1\frac{1}{2}$ miles inland; but beyond this there had been no nests in the town itself until 1943 after Dover had been very extensively damaged by shell-fire and bombs. When a count of nests was made in 1946, however, no less than some 200 pairs were found to have built on the tops of both damaged and un-damaged buildings extending into the heart of the town and its outskirts. The greatest concentration of nests at this time was in an area of 800 square yards behind the centre of the sea front, where at least 100 were counted.

Demolition and re-building commenced in Dover in 1949/50, but in spite of lost sites on and in damaged buildings, nests continued to be built on occupied dwellings, shops and commercial buildings, so that in 1954 there were certainly not less than 200 breeding pairs and their territory covered a very much larger area. This inland breeding of Herring Gulls is causing much disturbance to people and damage to property, and means are being sought to drive them away, but this will not be easy in view of the diminishing and precarious nature of the nesting ledges on the cliffs between Folkestone and Dover that provide the only alternative sites.

During September both adults and young leave the town, but by the end of December and the beginning of January there is a return to the nesting sites. G. E. TOOK

Mediterranean Black-headed Gull in Hampshire.—On 27th April 1954, while watching Black-headed Gulls (*Larus ridibundus*) at Eastney Point, Langstone Harbour, Hampshire, I identified an adult Mediterranean Black-headed Gull (*L. melanocephalus*). The flight of this bird was different from the others, the wings being shorter and more rounded at the ends. The primaries were pure white, and the rest of the wing was grey (not blue-grey) having no striking white leading edge, as in *ridibundus*. There was a black mark behind the eye and the nape was grey. The bill was stouter than those of the Black-headed Gulls, and like the legs and feet, which were often dangled when the bird was hovering, was dark red. In size it appeared slightly larger than *ridibundus*, and when on the water appeared shorter in the neck. G. H. REES

Common Tern nesting in Huntingdonshire.—Records of the Common Tern (*Sterna hirundo*) nesting inland in England are infrequent, but it may be that their habits are changing in this respect. For several years past both pairs and single birds have often lingered for several days, or even weeks, at gravel pits along the Ouse valley in Huntingdonshire during the spring migration. There is, however, no record of nesting in the county until 1954 when a pair successfully hatched 3 young in a marshy area in the north near the Nene valley. C. F. TEBBUTT

[Records indicating a spread of Common Terns inland in Lincolnshire since 1952 were published in vol. xlv, p. 347.—EDS.]

Bridled Tern in Dublin.—On 29th November 1953 Lt.-Col. C. F. Scroope picked up a dead tern on the shore of the North Bull Bird Sanctuary, Dublin. It was lying on the sand above the high water mark of recent tides, was quite dry and clean, showing no signs of injury or of having soaked in the water, and apparently

had only recently died. Col. Scroope, noticing that it was none of our usual terns, took rough measurements and brought it to a taxidermist for preservation, so that it could be critically examined. The taxidermist found the bird in good condition and quite fresh, but unfortunately he did not sex it and in an unusually short time he had mounted the skin before further wing measurements could be taken. The specimen was submitted to Mr. Kenneth Williamson, who identified it as a Bridled Tern (*Sterna anæthetus*)—an adult in winter plumage (there being no remains of juvenile feathers with buff tips on the mantle). This is the first record for Ireland, and the second for the British Isles.

P. G. KENNEDY

[Through the kindness of Col. Scroope and Miss Geraldine Roche of the National Museum of Ireland, it has been possible for us to see the mounted specimen.—Eds.]

Bridled Tern in Glamorgan.—On 11th September 1954 a tern, apparently freshly shot, was picked up dead at Threc Cliffs Bay, Gower, Glamorgan, by a man who described it as the size of a Common Tern (*Sterna hirundo*) with a black cap extending down to the nape, black wings, long black forked tail, white underneath, black bill, legs and feet. I asked for the body to be brought to me, but it was by then irretrievable. The wings, however, had been cut off, and from these it was possible, through the kindness of Mr. J. D. Macdonald who allowed me to compare them with skins in the British Museum (Natural History), to identify the bird as a Bridled Tern (*S. anæthetus*). This appears to be the third British record.

H. MORREY SALMON

[Col. Salmon has been kind enough to let us see one of the wings of this bird.—Eds.]

Scops Owl in Norfolk.—At 7 a.m. on 27th August 1954, as Douglas Galey cycled along the Horsey-Waxham road in Norfolk, he saw a small owl sitting by the road-side. As it made no attempt to move at his approach he picked it up and found that although apparently uninjured it was extremely exhausted. During that evening he took it round to Mr. George Crees, Major Anthony Buxton's keeper, who identified it as a Scops Owl (*Otus scops*). It died during the night of 28th-29th August. Mr. Crees showed me the body and I was able to confirm his identification, and arranged for it to be taken to the Castle Museum, Norwich. Here Miss R. M. Barnes had the skin preserved for their collection and she informed me that it was a female.

ERIC HOSKING

Alpine Swift in Caernarvonshire.—For some thirty minutes on 27th June 1954, my daughter and I were fortunate enough to see

an Alpine Swift (*Apus melba*) at Aberdesach, about eight miles from Caernarvon on the Pwllheli road about half-a-mile back from the sea. We were watching Swallows (*Hirundo rustica*) and Swifts (*A. apus*) wheeling over a field when this giant swift suddenly appeared. We noted that it was much lighter brown above than the Swifts, and then we saw the white throat and belly, separated by the brown breast-band.

J. G. HUGHES

Carrion Crows taking fish from water.—I was interested in the note on this subject (*antea* vol. xlvii, pp. 405-406) as I have twice witnessed similar behaviour. On 15th April 1951 at Eye Brook Reservoir, Leicestershire, I saw a Carrion Crow (*Corvus corone*), which was flying low across the water, suddenly swoop down and snatch up from the surface an apparently dead fish about nine inches long. The crow was immediately pursued by a passing Herring Gull (*Larus argentatus*) which chased it out of sight over a rise in the bank, still carrying the fish in its bill. On the 21st of the same month, and at the same place, I again saw a Carrion Crow take up a six-inch fish from the water in exactly the same manner, whereupon it was again chased out of sight by a small party of Black-headed Gulls (*L. ridibundus*).

E. L. ROBERTS

Carrion Crows taking fish from water.—In connection with the notes on Carrion Crows (*Corvus corone*) taking fish (*antea*, vol. xlv, p. 323; and vol. xlvii, pp. 405-406), I have two similar records. On 7th July 1953, at Hamper Mill Lake, Hertfordshire, a Carrion Crow flew out over the water from a willow tree, hovered for a moment just above the surface, and picked up a fish about five inches long in its bill. It then flew off with it, held lengthwise, to the trees. It gave the impression of having spotted the fish (presumably it was already dead) from its perch. On 29th April 1954, also at Hamper Mill Lake, a Carrion Crow was watched as it flew low over the water for some six feet before snatching a fish, about four inches long, and making off with it held in its bill. It seemed to have been following the fish before taking it. On neither occasion did the bird settle on the water at all. HUGH JONES

[Other records of similar observations, apart from those referred to above, have been described in *British Birds* as follows: vol. xl, pp. 158 and 245; vol. xli, pp. 95 and 278.—EDS.]

Bat as the prey of a Carrion Crow.—At 0745 hours on 15th October 1954—a dull, windy day—near Gopsall, Leicestershire, Mr. T. A. W. Kirk saw a small bat in flight being pursued by a Carrion Crow (*Corvus corone*). As the bat flew by, the Carrion Crow took off from its perch on an ash tree and swooped down. Missing the first time, the crow repeated the manoeuvre, and easily took the bat in flight as it turned into the wind. The crow carried the small creature into the tree, and hammered it to death.

M. A. ARNOLD

Eagle Owl in Shropshire.—On the night of 14th April 1954 an Eagle Owl (*Bubo bubo*) was accidentally killed near Oswestry, Shropshire. The bird was preserved. DORIS WILSON

[We have been sent a photograph of the mounted specimen, which clearly confirms the identification.—Eds.]

White-headed Long-tailed Tit nesting in Surrey.—On 18th April 1954, on the North Downs near Chelsham, Surrey, I watched a pair of Long-tailed Tits (*Ægithalos caudatus*) engaged in building their nest amongst bramble tendrils at the side of a lane. At the time, I considered that one of the birds possessed an unusually pale head, but the position of the nest coupled with poor lighting prevented my getting a good view of it. To my dismay, on visiting the site on 8th May, I found that the nest had been "ragged". Fortunately, on 19th June 1954, I succeeded in tracing this pair's repeat nest which contained young, and was then able to obtain satisfactory close-range views of both parents. One was typical of the British form (*Æ. c. rosaceus*), but the other had a dingy white head which lacked all trace of a broad blackish band extending from the lores over the eye to the mantle. Its head, moreover, appeared devoid of any dusky streaks. The orbital ring, however, was reddish. Apart from its white head it resembled its mate both in size and plumage. On subsequent visits to the nest, I noticed that three adults including the white-headed bird were engaged in feeding the young which left the nest safely on 27th June. A specimen of the Northern race (*Æ. c. caudatus*) is recorded as having been obtained near Reigate in 1896 (Bucknill, *Birds of Surrey*, 1900, p. 53.). Mr. Howard Bertham tells me that he has no record of the occurrence of this form in the county during the present century. HUBERT E. POUNDS

[In connection with this record, it is worth recalling that Stresemann has shown (*Beitr. Zoogeograph. Palaarkt. Reg.* (1919), and cf. *Handbuch d. deutsch. Vogelkunde*, Bd. 1, pp. 234—that white-headed birds occur with more or less frequency in populations of the so-called Central European race, *Æ. c. europæus*, which he regards as a mixed stock of inconstant characters occupying the region between the range of the true northern *Æ. c. caudatus* and the dark-headed races of the west and south of Europe. There has always been some question whether white-headed Long-tailed Tits recorded in Britain are, in fact, of the northern race. In the present case it seems probable that this white-headed bird, though showing some of the characters of the northern form, was, in fact, of British stock.—Eds.]

Northern Treecreepers in Northumberland.—On 8th October 1952 a Treecreeper believed to be of the Northern race (*Certhia f. familiaris*) was trapped at Monks' House Observatory, Northum-

berland, four days after a typical *C. f. brittanica* had been caught. This was reported at the time, with supporting details, but not published as it was felt that the evidence was insufficient. In 1954 almost exactly the same thing happened again: a typical *brittanica* trapped on 7th October; then what I feel convinced was another of the Northern form on 12th October. Over the previous week-end we had our first influx of northern immigrants: Redwings (*Turdus musicus*), Continental Song Thrushes (*Turdus ph. philomelos*), Blackbirds (*Turdus merula*) and, on the 10th, a Great Grey Shrike (*Lanius excubitor*) and then on the 12th this very distinctive Treecreeper, an adult. Except for the tail and primaries, nowhere could the brown tints of the upper plumage be described as deeper than "pale sherry-brown", the colour being a little clearer and brighter on the rump and upper tail-coverts. The superciliary stripe and the broad triangular tips of the upper feathers were a pale silvery grey, like silver birch-bark, but in spite of the extreme pallor of the plumage, the pattern formed by these and by the wing-bars was *most* distinct and reminiscent of that of a Short-eared Owl (*Asio flammeus*). The under-parts were pure satiny-white except for a very faint tinge of buff on the vent and tail-coverts. The basal half of the lower mandible was pale pink, the legs pale brown, the claws almost white. I handled 10 British Treecreepers in 1954, including juvenile and first winter examples, and eleven in previous years: not one of these birds, except the suspected *familiaris* on 8th October 1952, looked anything like this bird of 12th October. Both remained for several days in the garden (whereas the *brittanica* birds have always disappeared immediately after release) and both were extremely tame, allowing approach to within two feet: I feel sure that they were northern immigrants.

E. A. R. ENNION

Blackbird rearing four broods in same nest.—In 1954 in a suburban garden at Gillingham, Kent, a pair of Blackbirds (*Turdus merula*) reared four broods in the same nest in a privet hedge seven feet high and three feet thick. The nest, four feet from the ground and ten inches in from the inner side, was about eleven feet from the kitchen door which was in frequent use. It was first noted on 10th April, when it contained four young about four days old. These left the nest successfully on 19th April. The hen was seen in the nest again on 28th, and she laid the first of 6 eggs a day later. Five young left the nest on 29th May. The first egg of the third clutch of 4 eggs was laid on 4th June, the young leaving on 2nd July. The first 2 eggs of the fourth and last clutch of 5 were found in the nest on 11th July. Four young left the nest on 8th August. The nest, although considerably frayed round the rim, was still strong enough to have contained another brood.

To summarize, the nesting period lasted from approximately

24th March to 8th August, during which time clutches of 4, 6, 4 and 5 eggs were laid, from which seventeen young were reared.

L. J. RHODES and C. W. BUSH

[Two previous records of Blackbirds laying four times in the same nest have been recorded in *British Birds* (*antea*, vol. xxxix, p. 343; vol. xl, p. 85). In the second of these only were the birds successful in rearing all four broods (a total of fourteen young).—

Eds.]

LETTERS

THE NATURE OF "ANTING"

SIRS,—The recent comment to notes on "anting" (*antea*, vol. xlvii, pp. 312-313) gives the impression that Poulsen's theory on the nature of this peculiar behaviour is apt to be widely accepted by the initiated. This will almost certainly not be so and, as one with a fairly extensive aviary experience of anting, at close range, in several species of Passerines (crows, starlings, bower-birds, hang-nests, babblers, weaver-birds, etc.), I find it impossible to reconcile this new view with my own observations and offer these few comments to justify my disagreement.

As I see it, Poulsen's analysis follows this temporal and causal sequence:—(1) the bird first seizes the worker-ant as an item of food; (2) when holding the insect, the bird's sensitive head area is exposed to the formic-acid; (3) this releases an instinctive reaction (the anting-movements) whereby the bird wipes off the repellent secretion under the wings and tail, where it cannot irritate the skin; (4) this done, the ant is then eaten.

Such a scheme implies that feeding is the fundamental motivation involved and that the anting-movements themselves only result incidentally when acid touches the head. However, against this are the following undisputable facts. (1) While many species do seize and eventually eat the ant(s), several others may not even hold them in the bill, at least initially, but allow them to swarm up over all parts of the plumage, as does the Jay (*Garrulus glandarius*) in a special posture, and the Rook (*Corvus frugilegus*) by wallowing in the ants (see Goodwin, *Ibis*, vol. 95, p. 148 for details). (2) Other species reject the ant after performing the anting-movements, as did a hangnest (*Icterus* sp.) with a decided flick of the head. (3) Some birds, such as the Starling (*Sturnus vulgaris*) and Magpie (*Pica pica*) collect and cram several ants in the beak at once before anting with them. (4) A few of the caustic "ant substitutes" that some individuals have been recorded as using are inedible. (5) The mere sight of worker-ants may induce the birds (including those which regularly eat the ants) to perform the anting-movements *in vacuo* before coming into actual contact

with the insects. While, of course, a bird may have been attracted in the first place by the more edible pupae and flying-ants, all the above evidence strongly suggests that, when the bird shows a marked tendency to ant with the worker insects, the consumption of these ants is really an incidental factor and that the anting itself is primary.

Frequently, when individuals commence anting, the seizing movements are so instantly followed by the anting ones that there seems to be no chance for acid extrusion to have preceded and, therefore, to have caused the behaviour, as Poulsen's theory demands. But if the application of the acid to the feathers is the primary reason of the rubbing movements then this rapidity is very understandable. Further, the spread primaries and tail (Poulsen's "safe" areas) are in fact not the only ones to which the insects are applied or have access. For instance, the Magpie sometimes quite definitely rubs ants in the area of the vent—surely a most sensitive spot?—and I suspect that many other smaller species behave similarly, though their anting-movements are so rapid that it is hard to be sure. In my own Pekin Robins (*Leothrix lutea*), there seems to be a flash of white as they bring the tail forward in anting, and this must come from the long under tail-coverts. In those species which permit the ants to swarm over them, all areas of the plumage, and therefore the skin, are exposed.

The anting-movements themselves do not, then, appear to be an exclusive reaction to acid on the head (my Pekin Robins will ant with flying-ants which do not secrete formic-acid). However, when acid does get into the vulnerable and very sensitive eye, the bird reacts violently by rapidly shaking the head and leaping away, behaviour quite distinct from the typical anting-movements that Poulsen says are the avoiding reaction to acid on the head. In the Magpie, and I suspect in all other species that ant, the nictitating-membrane flicks across the iris during anting as a protection against acid in the eye. Possibly, this reflex is stimulated in the first place by the acid vapour.

It seems certain, therefore, that the anting itself is primary and the feeding only secondary. The anting-movements seem to be modified preening ones just as the dust-bathing actions of certain Passerines are, partially, adapted water-bathing ones (Simmons, *Ibis*, vol. 96, p. 480). I once watched a wild Jay anting at low-intensity and was not absolutely certain whether it was actually preening or anting, until I visited the spot and found the ants' nest. Normal preening and bathing are almost invariable sequels to anting. All this implies that the behaviour functions in some way, yet not understood, as a superior preening method. There is need of further critical work on the subject, and of a comprehensive review for bird-watchers in this country, based on extensive first-hand knowledge (for second-hand compilations are much reduced in value). Important references not cited in the editorial comment

include the papers of Ivor (1943, *Auk*, vol. 60, pp. 51-55), Wackernagel (1951, *Orn. Beob.*, vol. 48, pp. 150-56) and Goodwin (1953, *Ibis*, vol. 95, pp. 147-49).

K. E. L. SIMMONS

[We are glad to publish this criticism from Mr. Simmons as well as that from Derek Goodwin which appeared in our January issue (*antea*, pp. 47-48), for both have made special studies of "anting", though their findings are the opposite of Herr Poulsen's. While we were evidently somewhat premature in placing such emphasis on Herr Poulsen's work, it does show how imperfectly this subject is understood at the present time.—Eds.]

GUILLEMOTS ON AILSA CRAIG

SIRS,—Being interested in the birds of the Clyde area I would like to enquire about a statement by Dr. J. A. Gibson (*antea*, vol. xlv, p. 70) to the effect that not only the Southern Guillemot (*Uria aalge albonis*), but also the Northern (*U. a. aalge*), breed on Ailsa Craig. He writes: "The Southern Guillemot is in the majority, but a considerable proportion of northern birds occurs as well as many birds somewhat intermediate (*sic*) in character. Investigations into the exact status of each form have been in progress for some time and it is hoped that they will be completed in 1951." Since Dr. Gibson's hopes of completing his investigations seem to have been disappointed, I would like to ask on what his original statement is based. If he possessed specimens, he surely would already have assuaged our doubts; if he is relying on field-identification of races, he has come to a decision which even the most expert of us might avoid and which cannot be credited from one who, like Dr. Gibson, has expressed in print inability to distinguish the Rock and Meadow Pipits (*Scot. Nat.*, vol. 63, p. 79).

Once a statement has appeared in print it is liable to become accepted without further inquiry by later workers in the field and Dr. Gibson's statement on the guillemots has already been reproduced in Baxter and Rintoul's *Birds of Scotland* (p. 683), although not in a very confident manner.

M. F. M. MEIKLEJOHN

THE BIRDS OF CALDEY ISLAND, PEMBROKESHIRE

SIRS,—I am in the process of preparing a paper on the birds of Caldey Island, Pembrokeshire. Although this is one of the largest islands off the Pembrokeshire coast there is very little published matter concerning its bird-life. I should be grateful if ornithologists who have visited Caldey at any time would send me details of their observations thereon. Notes on the status and numbers of all species, even the commonest, are required.

All communications should be addressed to me at 138, Fitzjohn Avenue, High Barnet, Herts., and will be promptly acknowledged. In the event of publication full acknowledgement will be made to all whose records are used.

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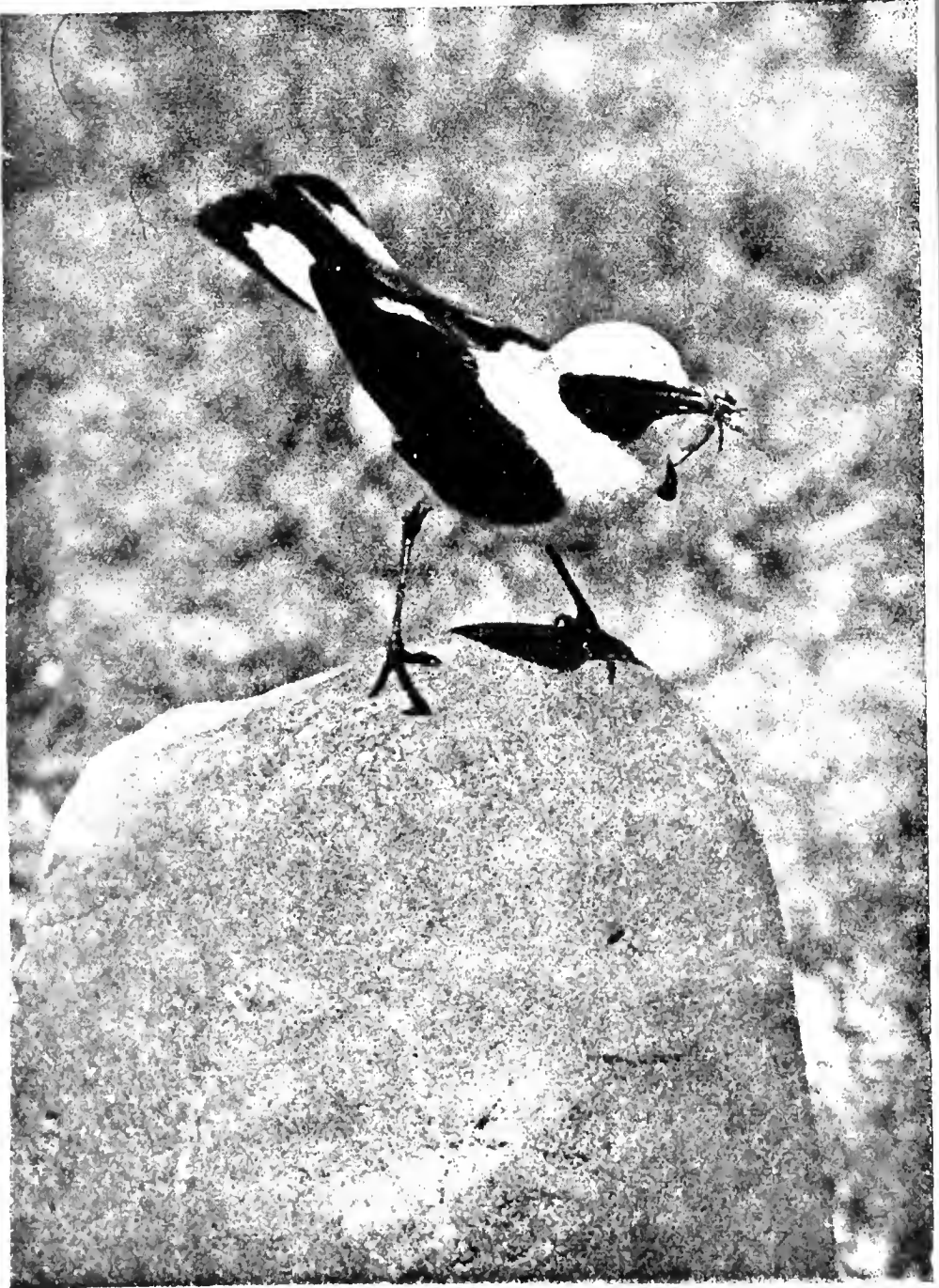
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Cover photograph by G. K. Yeates: Male Black-eared Wheatear (*Oenanthe hispanica*), South France.



SOME OBSERVATIONS ON THE REPRODUCTIVE BEHAVIOUR OF ROOKS

By DEREK GOODWIN

THESE observations were made in the springs of 1953 and 1954. They were undertaken largely as an accessory to studies of the Jay (*Garrulus glandarius*) in the hope that the comparison would lead to better understanding of the latter species in particular. No attempt was made to obtain any statistical data as to the precise number of times any activity was performed, since my interest lay rather in comparing the behaviour of as many different individuals as possible. Most of the observations were carried out at a small rookery of some 28 nests at Windsor Castle, Berkshire. Here the nests can be observed at a relatively short distance, some at eye-level and others at a slight angle above, from a public terrace. As the birds are completely accustomed to people being constantly on this terrace it is ideal for observation, not only of Rooks but also of Woodpigeons (*Columba palumbus*), Stock Doves (*C. ænas*), Jackdaws (*Corvus monedula*) and other birds that are breeding below eye-level in other trees. The observations took place between 10 a.m. and 2 p.m. G.M.T. for the most part. Unfortunately one may not enter the castle-grounds until 10 a.m. so that early morning observations were not possible. Apparently identical behaviour was seen at brief visits to other rookeries and during a day's observation of one in Oxfordshire, so far as could be observed from the ground.

BUILDING

The birds showed complete agreement with those watched by Ogilvie (1951) as to the part played by the sexes and the astonishing prevalence of stick-stealing. This robbery was not confined to sticks: nest-lining was stolen in quantity by birds needing it, whenever a chance offered. The innate building movements were always

quite "blind", but the precautions (often vain) taken to prevent material from falling certainly gave an impression of conscious awareness on the bird's part. This was very noticeable in pairs "trying" to get the first stick lodged in the selected site. Again and again the bird would push the stick down into the fork and make the side-to-side vibrating movement. It would do this in a stereotyped manner and without any intelligent adaptations in reference to the kind of stick or fork concerned, but it seemed to realise the danger of the stick dropping, was very reluctant to let go of it, and after having done so would at once try to seize it in time if it started to slip.

An unpaired female built an apparently perfect nest by herself and another female who was paired to a yearling male appeared to do so. At least the male never gave any help—other than "moral support and encouragement"—whilst I watched them. Lorenz (1932) states that in the Jackdaw the female is capable of building a perfect nest but the male is not and if working by himself only gets as far as the foundations (*Unterlage*). I suspect that it may, in all corvids, be a matter of necessary stimulation rather than potential ability. Coombs (1952) states that the male Rook usually does rather more work on the nest at all stages than the female. The same is true of Jays and Lanceolated Jays (*G. glandarius* and *lanceolatus*). Yet a male of each species in my possession that is known to be a "good" builder has got no further than the veriest beginnings of a nest on occasions when his mate never came into full breeding condition. It seems therefore probable that his mate's acceptance of the nest-site and interest—rather than practical help—in nesting procedure is necessary to release full nest-building behaviour in a male corvid.

THE FOOD-BEGGING, AND SUBMISSIVE DISPLAYS

The different ideas of observers as to whether particular wing-movements are best described as "flapping", "fluttering", "shivering", etc., appear to have helped obscure the fact that the Rook, like the Jay and the Lanceolated Jay (and I think all other corvids), has two *completely* different displays one of which is often, and the other usually, associated with courtship-feeding using the latter term in the wide sense. The difference is implicit in Ogilvie's (1949) descriptions (p. 67: *b* and *c*) although earlier (Ogilvie, 1947) he appears to equate them as, apparently, did Yeates (1934) and Armstrong (1947). At the 1952 Edward Grey Institute Students' Conference in Oxford Dr. Coombs described and illustrated both displays. The following descriptions and opinions are based on my own briefer observations and when Dr. Coombs publishes the results of his very long-term study of this species this will doubtless amplify and possibly modify them.

When inviting coition the female Rook adopts a somewhat horizontal posture, the wings are partly spread and drooped in an

arched, strained-looking manner, suggesting stiffness at the shoulders, and may or may not be quivered, usually slightly if at all. The tail (including the upper tail-coverts where they rest upon it) is violently quivered. Apart from its primary—but by no means most frequent—function, this posturing like the homologous display of Jays (Goodwin, 1952), Ravens (*Corvus corax*) (Lorenz, 1940) and Jackdaws (Lorenz, 1952) appears to be used in a submissive or appeasing sense. It is a common greeting of the female to her mate in the early stages of the nesting-cycle and often accompanies courtship-feeding. It may be given by the male to the female. In one instance this happened just after the female had refused coition. The male went almost immediately from the pre-coital (masculine) into the quivering display. I saw (at different times) each member of a pair of male Rooks (one an albino) at a Zoo give this display to its mate.

When about to lay or when incubating (occasionally at other times) the female Rook, like female jays (*Garrulus* sp.) begs food in a manner identical with that of the fledged young. She flutters or flaps her wings, lifting them quite high with a “loose at the shoulders” appearance which is the very antithesis of the submissive display. As she moves her wings she stretches her head forward somewhat (but the neck is seldom fully stretched, the bird usually being in a rather hunched posture), usually towards the bird from which she is begging, opens her bill and calls with the loud, pleading, “juvenile-type” note that is such a feature of any rookery in late March and April. Male Rooks, like male Jays, may also beg in this manner, although much less often. On 12th March 1954 at Windsor the presumed male of a pair sitting near each other on a bare branch begged repeatedly. Sometimes the female responded by false-feeding, and mutual billing followed for a few moments. On the few occasions when he was seen to feed his mate the yearling male begged to her for some moments—while she was also still begging to him—after having done so. His begging was less intense than the female’s and he did not flap his wings. A tame captive male (sexed after death) regularly greeted his owner with this begging during the nesting season. One adult wild male habitually begged in intervals of feeding his mate and young.

In the female this begging display is usually, if not always, an appeal for food and in any one bird it appears to vary in intensity according to her degree of hunger. It is certainly not due to sexual desire. On the contrary it appears to inhibit any overt sexual behaviour from the male. On one occasion a male and his mate were watched for several (not entirely consecutive) hours. During this time the female begged almost continuously. The male made no sexual advances towards her whatsoever, yet made four attempts to rape sitting females on nearby nests, besides being involved in many other raping attacks initiated by other males.

The significance of begging-behaviour in the male is uncertain. I would tentatively suggest that the food-begging should be considered not simply as a method of eliciting courtship-feeding, but rather as an expression of a mood in which the bird feels dependent on, and intensely desires some specific response from, its companion; also that the mood evoking the submissive display may be fundamentally different. Expressed in human terms and grossly over-simplified one might imagine the begging bird as saying, in effect, "Please do this for me" and the bird in the quivering submissive display as saying, "Please don't hurt me, I want to stay with you, and fear to fight you".

SEXUAL ATTACKS AND COPULATION

The constantly recurring episodes in which a male Rook drops onto an incubating female, attempts to rape her and is at once attacked by neighbouring males are well-known and have often been described. In my opinion they have almost as often been misinterpreted. It would almost seem as though wishful thinking on the observers' side has played some part and that when the old fable about the Rook's meting out of summary justice in the matter of stick-stealing (Goldsmith, 1774) was completely exploded, the myth of morality (according to *our* ideas not the Rook's!) was transferred to its sexual life. It has been said that this mobbing of the male attempting copulation occurs only in "stolen matings", although the more cautious have suggested that this was due to a social defence reaction to the defensive hostility which the victim invariably shows to her would-be ravisher. My own opinion is that the Rook shows an homologous innate attacking reaction to the sight of others of its kind copulating, as do pigeons (Heinroth, 1949) and many other birds. The attack of another male Rook on the mating pair follows immediately he sees what they are doing. In the only five instances in which I have seen mutually willing copulation between paired birds at the rookery the attack of the neighbours was as speedy and devastating as in the "stolen matings". It is likely that at different stages of the reproductive cycle the male Rooks' reactions in this respect may differ, but, all other things being equal, I am of the opinion that when "lawful matings" are not interfered with the reason is simply *that they have not been noticed*. The attacking birds do not only attack the "erring" male, they often peck fiercely at the female as well. Any of the males who finds himself on top of the female attempts to copulate with her. The main work of freeing herself is done by the female. It is, however, made easier when several males become involved—as usually happens—since no one male can then give her his undivided attention. He may try, in spite of punishment, to continue but is invariably dislodged. Once the female manages to get up and perch the males normally give way before her. They then react to her as to the "territory owner"

whom they fear to attack on its own ground. It is a remarkable proof of the strength of this impulse to attack mating birds that the Rook, like the domestic pigeon (*Columba livia*) will unhesitatingly invade other birds' territory and attack them "on their own ground" if it sees them copulating.

With a single exception I never saw a male Rook attempt to copulate with his *own* mate without any preliminary display and ceremonial, though Yeates (1934) regularly observed it. The exception was a male who arrived home at the moment that his incubating mate was the victim of an attack involving three other males. He at once joined the battle, and managed, with his mate's help, to dislodge them. Finding himself then on top of the female he at once "automatically" responded by attempting to copulate. She fought him fiercely, and it was not until, having dislodged him, she did not attempt to drive him from the nest-edge nor he to leave it, that I realised he was in fact her mate. On no other occasion did I see any male copulate with his mate when the latter was sitting. Often a male, after feeding his incubating mate, would become amorous and begin the male pre-copulatory display, but in each case the female circumvented him by stepping out of the nest before matters reached a critical point.

YEARLINGS AT THE ROOKERY

As the young Rook does not normally become bare-faced until its second summer, yearling birds are easily recognisable. These few that I have observed at rookeries have also appeared noticeably shorter of wing and tail as compared with the adults.

On 21st March 1953 two yearlings were present at the Windsor rookery for about two hours. They perched close to each other, displayed mutually, defended their immediate area from others and showed incomplete building and courtship-feeding movements. On 11th March 1954 a single yearling was present at this rookery. It approached various nesting pairs but was driven off, usually by the female. It gave the impression of being bewildered but intrigued by all the reproductive activity going on around it. It was often an onlooker at nest-robbing and once stole a stick itself and "toiled" with it for some minutes before dropping it. On 12th March it was still present. Between 10 and 11 a.m. G.M.T. it behaved much as it had the previous day. Thereafter it appeared to have attached itself to one particular adult, following it and perching near it. Whenever a fight broke out near-by—as happened several times—it at once went into a very intense version of the submissive tail-quivering display. It was the only bird seen to give this display that morning.

On my next visit on 7th April, a yearling, probably but not certainly the same bird, was paired to an adult. The latter appeared to be a female and the yearling a male. The adult alternately worked on the nest—which was in the finishing stages—

and begged her mate in vain for food. During the four hours that I watched, the yearling twice flew away, presumably to feed, returning after about twenty minutes. He made no attempt to feed the frantically begging female on his return. He gave no help with the nest but drove off any other Rooks that approached it. Two other yearlings appeared about 11 a.m., G.M.T. They alighted near a nest, were driven off by the female on it, perched a little way away, indulged in some display and false-feeding, but left after about half an hour. The same (?) two were present on 19th April and were driven fiercely from two nests which they tried to investigate.

On 19th April the yearling male's mate was sitting. The yearling did not return till an hour after my observations had started. He gave his begging mate a very little food and left shortly after. He did not return in the next two hours. On 30th April he was feeding his mate at approximately normal frequency during the short period (about two hours) that I watched.

FEEDING OF THE YOUNG

Yeates (1934) found that, at the nests he watched, only the male Rook fed the young in the early stages, the female herself eating all the food the male gave her, and not feeding her young until she had commenced to leave the nest to seek food in the fields. The behaviour of the Windsor Rooks was different. Usually the male came to the nest and either gave some food to the female immediately or did so after first giving some to the young. In almost every case the female immediately fed the young with the food given her. One female, who appeared extremely eager for food, swallowed all (rather little) that was given on two occasions, although giving a share to the young at subsequent feedings. At one nest the female never fed the young. She did not appear very eager for food, but stepped aside when the male arrived, waited quietly till he had fed the young and then took her share. Once a female was given all the food. She at once commenced to feed the young as the male flew off. Another female twice retained all the food given her until the male had gone but then fed the young again herself. On 30th April most young were well-grown and partly feathered, but the females—with one exception—were still on or beside the nests. The males appeared more reluctant to give food to the females than before (17th and 19th April) and at two of the nests were not seen to do so during the two hours I watched. At one of these the female took a large bolus of worms from the throat of one of her young and immediately fed another with it. During feeding both adults eagerly removed any visible food from the young bird's mouths in the same manner as does the Jay (Goodwin, 1951). Obviously the female must consume sufficient for her own needs. Probably even when she feeds the young she often finally retains and swallows a portion of the food herself.

AN UNPAIRED BIRD AND A CRIPPLE

At the Windsor rookery in 1953 one of the sitting females had lost her right leg just below the ankle, only about a quarter of an inch of tarsus remaining. This unfortunate bird was not only the object of at least twice as many raping attacks as any of the seven others incubating in the immediate vicinity, but was not respected on her own territory. Whereas once any other female managed to get up on the nest-edge she was given way to, this lame bird was viciously attacked. She was knocked over again and again as she tried to balance herself and fight at the same time. Only when her mate was present was their territory respected. The tendency of many animals to attack injured or sick members of their own species is well-known. In his paper on the Carrion Crow (*C. corone*) Kramer (1941) describes Rooks that had been man-handled and then ringed and released being attacked by others as they sat or flew weakly about. Goethe (1940) gives many examples of such persecution in different species. One has the impression in many such cases that it is not simply a matter of an already aggressive creature being encouraged (or to speak ethologically having its escape-drive lowered) by signs of weakness in its adversary. An animal in an apparently "neutral" state often seems *to become enraged* at the sight of the abnormal movements of an injured fellow. It appears to be motivated by some feeling homologous with the "indignation" that humans often show towards one of their number who behaves in an abnormal or unconventional manner.

It is noteworthy that this Rook's mate obviously felt no animosity towards her because of her injury. Similarly a one-legged Black-headed Gull (*Larus ridibundus*) was persecuted by other members of the colony but was paired to a normal specimen (Kirkman, 1937). In man one finds many similar situations where individuals who are condemned for unconventional behaviour by most of their fellows have not thereby alienated those bound to them by strong ties of affection.

Somewhat to my surprise this female was still alive in 1954. She then had a nest at the opposite end of the rookery, on the extreme periphery of the colony. Owing to this nest being in a bad position for observation I did not make many notes on her behaviour. She was certainly less persecuted than in 1953, probably as a result of her nest not being in the immediate vicinity of many others.

In 1953 a single female was noticed in early April to spend much time sitting disconsolately on a half-built nest. No mate was ever with her and I imagine that he must have come to grief shortly before. This female had an injured right wing, which she always drooped when perched although she could fly quite well. By mid-April (when my observations in that year ceased) she had done no further work on the nest although often making half-hearted

building movements. On 11th March 1954 this bird was sitting in the same place, although the nest had evidently been blown down. The next day she had fixed the first stick into the fork. On 20th March her nest appeared complete from the outside. I watched her from 10 a.m. to 12 p.m. G.M.T. Most of this time she perched glumly by her nest. Occasionally she would beg towards other Rooks and sometimes did so "*in vacuo*". Once she stole some nest-lining material from an unguarded nest and added it to her own.

On 17th April this bird remained on the nest from 10 a.m. till 1.30 p.m. G.M.T. (at which time I left) except for a break about 11.40 a.m. when she came off for a few minutes, preened, stretched and took a short circling flight. She did not leave to seek food. She appeared, in the last hour especially, to be suffering much from hunger. She had frequent bouts of fidgetting and preening (?displacement activity) and food-begging. Sometimes this food-begging was directed at other Rooks—who ignored her—but just as often it did not seem directed at any particular object. On the 19th her behaviour was the same. On 30th April, when most of the other nests held well-grown young, she was still sitting. She was then screened too much by newly-opened leaves for me to see her movements in detail, but between 10.30 a.m. and 12.30 p.m. she remained at the nest. Presumably her eggs were infertile, since, had they hatched and the young died (as they would inevitably have done from cold or hunger), she would surely have deserted.

It is of interest that in this species where the male usually plays so large a part in the reproductive activities an unpaired female should be sufficiently stimulated by internal physiological factors, and perhaps also the possession of territory and the breeding of the other Rooks about her, to build, lay and incubate. Also that she had remained in the rookery, nesting again in the identical fork, and not wandered off to try and find a mate else-where. The nesting of my first hen Magpie (*Pica pica*), which I have recorded elsewhere (Goodwin, 1951b) may have been a parallel case. The many records of unpaired female doves, pigeons and parrots laying eggs are highly suspect. Reading "between the lines" of such accounts it is usually at once evident that the bird concerned "considered itself" paired, either to its human owner, to another female (naïvely supposed by the experimenter to be supplying only non-sexual stimuli) or to some other creature. This Rook, however, showed no signs of considering herself paired to any particular male.

REFERENCES

- ARMSTRONG, E. A. (1947): *Bird Display and Behaviour*. London.
COOMBS, C. J. F. (1952): Addendum to C. J. Skead's paper "A study of the Black Crow *Corvus capensis*." *Ibis*, 94: 450-451.

GOETHE, F. (1940): "Über das "Anstoss-Nehmen" bei Vögeln." *Journ. f. Tierps.*, 3: 371-374.

GOLDSMITH, O. (1774): *An History of the Earth and Animated Nature*. Vol. II, p. 96.

GOODWIN, D. (1951a): "Some aspects of the behaviour of the Jay" Pt. 1. *Ibis*, 93: 414-442.

———— (1951b): "My Magpies, past and present" *Avic. Mag.*, lvii: 10-15.

———— (1952): "A comparative study of the voice and some aspects of behaviour in two old-world jays." *Behaviour* IV, 4: 293-316.

HEINROTH, O. and K. (1948): "Verhaltensweisen der Felsentaube (Haustaube), *Columba livia livia*, L." *Zeitschrift f. Tierpsychologie*, 6(2): 153-201.

KIRKMAN, F. B. (1937): *Bird Behaviour*. London and Edinburgh.

KRAMER, G. (1941): "Beobachtungen über das Verhalten der Aaskrähe (*Corvus corone*) zu Freund und Feind." *Journ. f. Orn.*, Festschrift Oskar Heinroth: 105-131.

LORENZ, K. (1932): "Betrachtungen über das Erkennen der art eigenen Triebhandlungen der Vögel" *Journ. f. Orn.*, 80: 50-98.

———— (1940): "Die Paarbildung beim Kolkkraben." *Zeitschrift f. Tierpsychologie*, 3: pt. 3: 278-292.

———— (1952): *King Solomon's Ring*. London.

OGILVIE, C. M. (1947): "Observations in a rookery during the incubation period." *Brit. Birds*, xl: 135-139.

———— (1949): "Observations in a rookery in winter". *Brit. Birds*, xlii: 64-68.

———— (1951) "The building of a rookery." *Brit. Birds*, xliv: 1-5.

YEATES, G. K. (1934): *The life of the Rook*. London.

THE SIGNIFICANCE OF VOICE IN THE BEHAVIOUR OF THE LITTLE RINGED AND KENTISH PLOVERS

By K. E. L. SIMMONS

THIS short paper collects and expands some notes on the voice of the Little Ringed and Kentish Plovers (*Charadrius dubius* and *alexandrinus*) partially scattered through three earlier papers (Simmons, 1951; 1953a; 1953b). It aims as much to show how the study of voice has helped in the analysis of certain aspects of behaviour, as to provide a descriptive inventory of the various calls for the general reader. Quite intensive study on the Little Ringed Plover has been in progress over four years in Berkshire and its voice now fairly well worked out. While there is no full treatment of this species' voice in English, a fair amount of information is scattered through the relatively large Continental literature, especially Sluimers (1938), Wyss (1946) and Dathe (1953) which contain many other references. In addition, recordings made by Eric Simms for the B.B.C. are now available, copies being deposited in Oxford (Edward Grey Institute; British Trust for Ornithology) and in Cambridge (Department of Zoology) (see *B.T.O. Bulletin*, No. 52, p. 8). I am indebted to Eric Simms and E. R. Parrinder (who helped with the recordings) for the short descriptions of them which appear later in this paper. Observations on the Kentish Plover, in Egypt in 1949/50 and in the Netherlands in June 1952 and May 1953, are far from complete but are given for comparison and as a basis for further study.

The rendering of bird calls is notoriously difficult and notation here follows the direction in *The Handbook of British Birds* (Vol. I). It is often very hard for the reader to fit the written word to what he hears in the field. Work on voice needs to be linked with the rest of the bird's behaviour, and providing this is adequately done and any marked rhythm, emphasis, tone qualities and specific feature of the calls indicated, then the field-observer should easily recognize them from the written description even though his rendering might differ somewhat. For example, the "song" of the Little Ringed Plover is described as "gree-ai gree-ai gree-ai . . ." (muffled, never ending and almost machine-like in its regularity) by Wyss (1946); "cree-ah(k), cree-ah(k), cree-ah(k) . . ." (monotonous, deliberate and rusty) by Simmons (1953a), and "doo-ai doo-ai doo-ai . . ." (rhythmic) by Dathe (1953), each rendering, coupled with mention of the display-flight (*Balzflug*), clearly referring to the same utterance.

One general principle of interpretation has been followed. If a particular call appears in, say, two contexts, one obviously the

major one and the other secondary, it has been assumed then that the internal motivation responsible for that call is the same in both situations and is that of the major one. Thus, in territorial encounters the Little Ringed Plover often utters a ringing "gree-gree-gree . . ." note while in threat-display and prior to direct attack. The call is therefore obviously at least partially aggressive in causation. The same call is sometimes given between members of the mated pair and is assumed to be also partly aggressive in this other situation. *This interpretation is supported by observations on pair behaviour other than voice.* I believe that such an interpretation is preferable, in the light of much modern work on animal behaviour, to postulating a general "showing-off" drive as implied in such German terms as "*Imponiergehaben*" (self-display).

Both sexes in each of the two plover species utter the various calls unless otherwise indicated. Generally speaking, the Little Ringed is by much the more vocally conspicuous of the two.

LITTLE RINGED PLOVER

1. *The alarm-note.*

This is the most frequently heard call, usually an incisive, whistling "pee-u", with emphasis on the second syllable, uttered singly or in a non-slurred succession, the bill opening and closing for each note. It is given all the year round, both in summer- and winter-quarters, on the ground and in the air, in circumstances clearly proving that it is indeed an alarm-note, a product of the escape-drive. It occurs, often with unmistakable escape-patterns (bobbing, running and flying away, etc.) and also displacement-feeding (an activity due to thwarting of the escape-drive; see Simmons, 1955), both on the approach of man and during encounters between rival plovers. In the early days after pair-formation, before male and female are fully used to each other, this call may occur when they approach one another closely, as may the alarm/threat- and the general threat-notes, clearly illustrative of the influence of the escape- and aggressive-drives on pair relations, an interpretation supported by the rest of the birds' sexual-behaviour (see Simmons, 1953b).

The alarm-note is especially emphatic when the birds have young, becoming more querulous, piercing and somewhat higher-pitched—"pee-pee-pee-pee-pee-pee *pee-u*" and "*pee-uch*" being typical examples. The young themselves do not have the true "pee-u" call when flightless, but it soon develops after fledging, perhaps incomplete at first, a monosyllabic "pee", though one juvenile gave an adult-like call two or three days after its first flight.

2. *The alarm/threat-note.*

This call, heard only from breeding adults, is a rather fluty, short and clipped "cru" with a noticeably hard edge (also rendered "pip", "plip" and (best) "prip" at various times), sometimes given singly or, more usually, in a series only slurred at high intensity. The bill remains open all the while. The rendering "cloo" (Simmons, 1953b) does not adequately convey the call's clipped nature, etc. Its distribution in the breeding-cycle is somewhat peculiar, occurring most frequently as a response to human intrusion from the incubation stage onwards until the young are independent, and also less commonly in similar circumstances for a short while after arrival at the beginning of the season. Spencer (1953) reports a similar distribution of the "parents' alarm" call of the Lapwing (*Vanellus vanellus*). Further, in the early days after pair-formation, the "cru" note may occasionally be heard when male and female come near one another, as also the alarm- and general threat-notes. Parrinder (*in litt.*) states that this call is nearly always given from the ground.

All evidence indicates that this is an alarm/threat, a product of both the escape- and aggressive-drives like so many of the predator-reactions of breeding birds (Simmons, 1952; 1955). Obviously at least partially an alarm-note, it occurs in similar circumstances as, and often together with, the "pee-u" call and other escape behaviour. In sound, it is intermediate between the pure alarm- and general threat-notes, having a particularly close resemblance to the latter in times of special stress (e.g. when the chicks are very small or give their own alarm-note), then becoming faster, more vehement, higher-pitched, etc. While the "pee-u" call is the most frequent accompaniment of predator-reactions at low intensity, the "cru" is commoner during more intense behaviour when the aggressive-drive is also known to increase in strength and when the Kentish Plover, at least occasionally, gives its undoubted threat-note. The birds approach a man much more closely if he is sitting or (better) lying down because in so doing he at least partially eliminates those characters to which the birds react. "Cruing" is frequent during such an approach but should the observer get up he at once releases escape behaviour and "pee-u" calls become dominant.

3. *The general threat-note.*

The "hostility-ery" of Sluiters (1938), this call is a common component of all stages of aggressive behaviour (see Simmons, 1953a), probably occurring most frequently during approach, chasing and the horizontal threat-display, the peculiar, squat aggressive posture of the Little Ringed. Unlike the notes already described, this one is nearly always uttered in a linked succession, e.g. "gree-gree-greegreegree . . ." There is a vague resemblance to the laughing-call of the Green Woodpecker (*Picus*

viridis), the plover's note having a characteristic ringing and musical tone which, as the sound develops and increases in speed, gets higher-pitched and more emphatic. The occasional snatch of threat-note that may be heard from paired birds (only male to female?) prior to nesting is indicative of the aggressive feeling that cannot be fully suppressed on close approach. Further, Wyss (1946), for example, records "gree . . ." calls from the male when relieving the female on the nest, also noting that she gave the same series of notes when her mate landed near (see notes on recordings in Appendix, p. 115).

4. *The aerial threat-note.*

While the "gree" note is uttered both on the ground and in the air, so far as I know the present call, at high intensity, occurs only at close quarters during aggressive flight. This and the next note are characteristic of the male plover only. On seeing an intruder some way off, either on the ground or in the air, the male flies fast towards it, giving the general threat. As he nears the opponent, he assumes the flight-threat display, stalling with wings quivering in a shallow V, tail sometimes fanned. At the same time, the "gree" call develops into a peculiar, mechanical buzzing, very fast and continuous and rather like the slower, twittering flight-note of the Sand Martin (*Riparia riparia*). Often this approach and flight-threat-display occurs during the display-flight circuit of the breeding area, when innocent birds of many species (10 Passerines, 1 pigeon and 3 waders noted) that happen to be passing are approached and buzzed. Even the female may be similarly treated on occasions, and also empty points in the air! Once a bird buzzed me. This note could, of course, be regarded as just another form of the general threat-note (as Parrinder, *in litt.*, suggests), Sluiter (1938) recording that "In this 'hostility flight' the expression of very strong emotions of rage produces a rapid rattling sound, described by Voigt as 'grigrigrigri' which always after an increase of stimulation becomes more rapid and higher in pitch and may pass into a hissing, rattling sound."

5. *The song-note.*

This male utterance seems the functional equivalent of the advertising-song of many territorial Passerines and likewise may be given with or without the presence of other members of the same species. A slow, deliberate and rusty "cree-ah(k)-cree-ah(k)-cree-ah(k) . . .", it is delivered monotonously and almost continuously during the slow-motion, butterfly display-flight round the breeding area. This last is most frequent before nesting is under way and often follows aggressive encounters. I once heard a snatch of song from the ground after a tiff early in the season. Human observers may release display-flight and song before the

birds nest. This seems a direct threat rather than a displacement-activity.

Both *The Handbook* and Fitter (1952) incorrectly describe the song as a trilling elaboration of the ordinary (= alarm) call-note. Peterson *et al.* (1954) also dub it a trill but syllabize it correctly—"tree-a". Creutz's description of a grating "chreea, chreea", repeated a great many times, seems an excellent rendering of the song and not of the alarm-note as suggested by *The Handbook*.

6. *The scrape-ceremony note.*

This is the only major Little Ringed Plover note of which I have but slight experience. Both Wyss (1946) and Dathe (1953) describe the calls of the male while scraping, etc., in the presence of the female as "deepdeepdeep . . . gvee-ai gvee-ai gvee-ai" (in the German "dipdipdip . . . gwiä-gwiä gwiä"), sounding hoarse and muffled. Wyss also records that soft "gvee-ai" calls may be heard occasionally at nest-relief (as also may the threat-note) and that the male may call thus when scraping before intruding plovers. In such circumstances as the last, I once heard a slow and not very loud "wee-cle-wee-cle . . ." Parrinder (*in litt.*) kindly gave me the following from his own notes: "male advanced uttering very low calls which it appeared to make almost without opening its bill—a liquid 'quilt' and a very low and soft 'kwee-voo kwee-voo'; tail-display and coition followed shortly. Later I heard a low 'pee-pee-pee' from the female just before another coition attempt".

7. *The distraction-display note.*

One might gather from the notes of Armstrong (1952) and others that this call is of regular occurrence, yet in scores of hours' observation over five seasons, C. E. Douglas and I have noted it from displaying birds only on very few occasions. Even then only two birds, out of at least nine and probably as many as sixteen individuals, have uttered it, during very intense distraction-display. There is a peculiar combination of two sounds in this call: a fast, relatively high-pitched, nasal chatter (somewhat tern-like as noted by several observers), with a rather squealing tone superimposed. This last character is very interesting when one remembers that many predators are attracted by such a sound. The note probably is basically aggressive as is the intense distraction-display which it accompanies (Simmons, 1955). On one occasion, the calling and display followed an aerial attack which was not pressed home. The general threat-note of the Kentish Plover may be heard during intense distraction-display, as possibly may the Little Ringed Plover's very occasionally (see Höhn's (1946) description in the section on *Other notes*, p. 112).

8. *The parents' call-up note.*

When the parent returns to the area in which it left the chicks, it calls them up with a fast, continuous "pip-pip-pip . . ." This note resembles the "cru" somewhat, which together with the "pee-u" functions to warn the chicks of danger, producing instant crouching in small chicks and alerting the older ones. When the smaller youngsters reach the adult, they are usually brooded. Spencer (1953) suggests a relationship between the all-clear and predator-mobbing notes of the Lapwing, and I have noted a similarity between the alarm- and call-up notes of the Ringed Plover (*Ch. hiaticula*).

9. *The small chicks location-call.*

Small chicks, crouching after a disturbance, will sooner or later begin to make a rather high-pitched, piping "cheep", etc. When all of a brood of four utter the note at the same time from different points, the effect is rather confusing for the observer (but not, I hope, for the parents). This call functions to advertise the youngsters' location to the adult and probably expresses a desire for parental brooding. A similar sounding but fainter call from inside the fractured but unhatched egg is probably the same. Parrinder (*in litt.*) has heard this call from unfractured eggs at least 12 hours before hatching.

10. *The chicks' alarm-note.*

When an immobile chick is handled, it may sooner or later give its alarm-note—a rather high-pitched, purring trill (see *antea*, vol. xliii, p. 161), in some way reminiscent of the call of the nestling Starling (*Sturnus vulgaris*). This call on being thus secured by a predator (even though it be a well-meaning one like a bird-watcher) has two results: (1) it causes other chicks of the brood, that are near, to get up and scatter, to the confusion of a natural predator; (2) it brings up the parent which will demonstrate intensely at close quarters. The chicks of both the Kentish and Ringed Plovers have similar calls.

Other notes.

The ten calls listed above are the major ones though others doubtless exist, probably mainly variants of these. England (1944) records notes exclusive to nest-relief (though no one in those early days had had time to become familiar with the bird's basic vocabulary): "quip" from the presumed female, and "quoy, quoy, quoy-royp" from the male. Parrinder (*in litt.*) suggests that "perhaps this is the call on band 4, front, of the B.B.C. recordings, although this was given by an incubating adult on the approach of a human intruder and followed the normal alarm notes." On one occasion, an adult, after intense distraction-

display, and when I hid myself, landed and frequently gave the "pee-u" and "eru" calls at first, and afterwards a long series of "cle-wu" notes somewhat like individual song-notes. Höhn (1946) recorded a melodious trill, consisting of a rapid repetition of "trü-trü-trü", during distraction-display—this may well have been the general threat-note (see Kentish Plover records below). Occasionally I have heard a series of low, rolling rattles from aggressive birds on the ground (a low intensity version of the buzzing note?), and once a non-descript, high-pitched call during copulation, England (1944) recording "a different form" of the distraction-display note in such circumstances.

KENTISH PLOVER

It has not been possible to treat the voice of the Kentish Plover in the same way as that of the Little Ringed, as one really needs to study a species throughout the season to get even a preliminary understanding of its utterances. The following calls and groups of calls were recognized as distinct on the breeding-ground. Others were heard so infrequently that their status could not be determined. The Kentish is a much quieter bird than the Little Ringed.

Notes given on human intrusion.

There are two alarm-notes. The "kittup" call (see *The Handbook*; and Simmons, 1951) is a very common vocalization, heard in the air and on the ground. It varies from single utterances, through a series of these (each note given separately) to a twittering, purring and slurred edition—"trr-trr-drrp", etc., very hard to render. Interspersed with these "kittups" and occurring also on its own, comes a quiet, plaintive but incisive "tweet" or sometimes "too-eet" (rendered "a fluty 'poo-eet' or 'po-it' "by Peterson *et al.*, 1954). This is very like the contact-note of some *Phylloscopus* warblers and is entirely out of context in the Kentish's open habitat. I had the impression (but this needs verifying) that this call is the equivalent of the Little Ringed's "eru".

The threat-note.

This most distinctive call is the direct equivalent of both the "gree" and buzzing threat-calls of the Little Ringed, both of which it resembles in sound. It is a twanging, metallic "dwee-dwee-dweedweedwee . . .", sounding like a stone bouncing rapidly over thick ice, and occurs in much the same circumstances as the general threat-note of the Little Ringed (the Kentish has no flight-threat-display), during the Robin-like aggressive posture, etc. While neither R. W. Crowe nor I noted a distinct song form during this species' butterfly display-flight, we did hear the threat-note instead. *The Handbook*, Fitter (1952) and Peterson *et al.* (1954) describe the "song" as a trill, and *The Handbook's*

rendering, "trit tritritritrrr" could possibly fit the "dwee" call. Once, a female with newly hatched chicks gave the threat-note while performing intense distraction-display, clearly indicating her aggressive feelings. Howard's (1907) record of a bird lying on the ground, rapidly flapping its wings and uttering a peculiar buzzing sound, obviously refers to similar behaviour.

ACKNOWLEDGEMENTS

My thanks are due, especially, to E. R. Parrinder for his notes and comments, and to R. W. Crowe and C. E. Douglas with whom I have spent many fascinating hours watching plovers and other birds.

SUMMARY AND CONCLUSIONS

Eight notes are described for the adult Little Ringed Plover and two for the flightless chicks. A less detailed account is given of the alarm- and threat-notes of the Kentish Plover. The following points are worth special mention:—

1. In the Little Ringed Plover, observations on behaviour other than voice show that both escape and attack tendencies are present in pair behaviour (though of course not exclusively). Thus for example, the male prior to copulation approaches the female in the horizontal threat-display and the ensuing upright pre-coital posture also seems mainly aggressive. The female may show escape behaviour (running or flying away, bobbing) and after copulation both birds run away from each other and displacement-feed. Studies on voice support these other observations. Before egg-laying, the alarm-, alarm/threat- and threat-notes may sometimes be given when male and female come near one another, and the threat-note may be heard at nest-relief.

2. The alarm/threat of the Little Ringed Plover (and possibly its threat-note occasionally) and the threat-note, etc., of the Kentish Plover may be given to human intruders when the birds have young, facts supporting the theory that many predator-reactions are due to a conflict between escape and attack.

3. The alarm-call of Little Ringed Plover chicks stimulates intense predator-reaction in the parents, the same being true of the Ringed Plover and undoubtedly of the Kentish.

REFERENCES

- ARMSTRONG, E. A. (1952): "The distraction displays of the Little Ringed Plover and territorial competition with the Ringed Plover." *Brit. Birds*, xlv: 55-59.
- DATHE, H. (1953): *Der Flussregenpfeifer*. Leipzig.
- ENGLAND, M. D. *et al.* (1944): "The breeding of the Little Ringed Plover in England in 1944." *Brit. Birds*, xxxviii: 102-111.
- FITTER, R. S. R. and RICHARDSON, R. A. (1952): *The Pocket Guide to British Birds*. London.

HÖHN, E. O. *et al.* (1946): "The Little Ringed Plover in the London area in 1945." *Brit. Birds*, xxxix: 12-13.

HOWARD, H. E. (1907): *The British Warblers*. London.

PETERSON, R. *et al.* (1954): *A Field Guide to the Birds of Britain and Europe*. London.

SIMMONS, K. E. L. (1951): "Distraction-display in the Kentish Plover." *Brit. Birds*, xlv: 181-187.

_____ (1952): "The nature of the predator-reactions of breeding birds". *Behaviour*, 4: 161-171.

_____ (1953a): "Some aspects of the aggressive behaviour of three closely related plovers." *Ibis*, 95: 115-127.

_____ (1953b): "Some studies on the Little Ringed Plover." *Avic. Mag.*, 59: 191-207.

_____ (1955): "The nature of the predator-reactions of waders towards man; with special reference to the role of the aggressive-, escape-, and brooding-drives." *Behaviour*: in the press.

SLUITERS, J. E. (1938): "Bijdrage tot de biologie van den Kleinen Plevier." *Ardea*, 27: 123-151.

SPENCER, K. G. (1953): *The Lapwing in Britain*. London.

WITHERBY, H. F. *et al.* (1938-1940): *The Handbook of British Birds*. Vols. 1 & 4.

WYSS, H. (1946): "Beobachtungen an brütenden Flussregenpfeifern." *Orn. Beob.*, 43: 61-71 (from a translation by M. J. Wernham (May 1954) to be deposited in the library of the Edward Grey Institute, Oxford).

APPENDIX

The B.B.C. Little Ringed Plover recordings *

By ERIC SIMMS and E. R. PARRINDER

1. *Alarm-note*

Band 1, front, illustrates the typical alarm-note, given by a bird calling from the ground. Band 2 is a "symphony" of alarm-notes uttered in flight by a mixed flock of adults and young. Band 3 is a softer version of the call and was given by an incubating hen on the distant approach of a human intruder. The probability that the alarm call is inherent is shown by band 5, back, which records the thin cheeping of a three-day-old chick, held in front of the microphone; many of the notes are already disyllabic and are recognisably similar to the adult call, although lacking in power and resonance.

2. *Alarm/threat-note*

The alarm/threat-note is given in bands 1 and 2, back; in particular, band 2 illustrates the rapid, monotonous repetition of the call in times of stress—in this case the proximity of a human intruder to the flightless chicks.

* The numbers and terminology of the calls are as given by Simmons in the body of the paper.

3. *General threat-note*

This call appears twice on these recordings (bands 5 and 6, front) and in each case it was made by the incubating hen on the approach of the cock.

6. *The scrape-ceremony note*

The description of the scrape-ceremony note approximates to the calls at the end of band 6, front; these calls were made by the cock, approaching the nest, in response to the alarm/threat notes given by the incubating hen. They were very low in level and would probably have been inaudible to the human ear at more than a few yards range.

8. *Parents' call-up note*

The call-up note is recorded on band 3, back, and it is interesting to compare it with the harder "cru" notes on band 1 (mild anxiety) and band 2 (intense anxiety). All these notes are basically the same, the differences being in pitch and speed of delivery. At the end of the sequence of "pip-pip" notes on band 3 the adult gives a soft "quoy" which appeared to indicate the final all-clear.

ROYAL TERN IN DUBLIN:

A NEW BRITISH BIRD

ON 24th March 1954 Mr. R. G. Wheeler picked up the remains of a tern on the shore of the North Bull Bird Sanctuary, Dublin; they were partly covered by sand at the high tide line. The bird had been dead for a considerable while; most of the body feathers had gone, but the head, wings, legs and feet were intact. The wings were somewhat oiled. The bird was sent to Mr. Kenneth Williamson, who identified it as a Royal Tern (*Sterna maxima*), the first record for the British Isles and Europe.

P. G. KENNEDY, S.J.

[Through the kindness of the Rev. Fr. P. G. Kennedy, S.J., and Miss Geraldine Roche of the National Museum of Ireland, we have been able to examine the specimen, and we are very grateful to Mr. R. W. Sims of the British Museum (Natural History) for comparing it with skins in the National collection. In view of the fact that the bird had obviously long been dead when it was found, and because it was picked up on the tide-line, it was thought possible that it might have died in mid-ocean and been carried across the eastern Atlantic by the Gulf Stream, thence into the Irish Sea. The body of the bird had been eaten away and it was suggested that this was due to the attentions of small marine animals during a long immersion in the sea. In view of these possibilities it was thought desirable to get expert advice, and we therefore submitted the remains to Mr. G. M. Spooner, of the Marine Biological Laboratory, Plymouth. He discussed them with his colleagues, and with members of the National Institute of Oceanography, and has written as follows:—

“In the first place—a negative point—there is nothing whatever against this bird having died on the eastern Irish coast and having reached its present condition amongst beach litter. Most of the eating away would have been done by *Orchestia*, or by *Talitrus* on sandy ground; these always feed under cover and will ignore feathers. Secondly—and more positively—there is everything to be said against its having travelled across the Atlantic or indeed for a part of the way.

“The beak, wings and legs seem in much too good a condition for this to have happened. During the sea passage the soaking and bacterial action would have loosened the attachment of the feathers and softened the ligaments and tendons. The mandible would not have been able to stiffen up as it has. All feathers remaining on the body would have readily come away on handling. The plumage and the two wings would not have survived almost intact. (These are not statements based on the result of experiment, but are fair assessments of our experience of the action of sea water.) Further, it is unlikely that a floating body would long escape the attentions of scavenging gulls and fish. Incidentally, if the bird had come far across the ocean, it would presumably have passed through a region where small sharks may be rather numerous; these operate at night and snap indiscriminately at anything floating. Finally, objects drifting for any time in the North Atlantic or in coastal waters are apt to get settled on by marine organisms with calcareous shells, but there is no trace of such a settlement on the beak or legs. This further suggests that the body had not been floating long, even in coastal waters.

“At the same time, the position where it was found—Dublin—is of significance. Dr. H. P. F. Herdman, of the National Institute of Oceanography, tells me that he would not expect objects carried to our shores from the open ocean to fetch up at this place, and points out that the experiments being carried on now with plastic envelopes dropped at different places out to sea are instructive. I understand that numbers are being recovered, but none anywhere near the Dublin coast. I do not want to conclude that a fortuitous combination of favourable winds could not combine to steer flotsam to Dublin, but the probabilities are very heavy against it; and a glance at the weather maps fails to suggest that the conditions in March 1954 were in any way peculiarly helpful. In general, one would expect objects carried up on the main Gulf Stream, or near it, to fetch up between N.W. Ireland and Shetland; while objects coming up from farther south, by a more erratic and chancey route, would get trapped on our south-western coasts before reaching the Irish Sea.”

In view of Mr. Spooner's report, we consider that there is a sufficiently strong case to dismiss any suggestion that the bird drifted here as a corpse, and that, therefore, there is every reason to treat it as a genuine vagrant to the British Isles.—Eds.]

SOME PHOTOGRAPHIC STUDIES OF THE ROYAL TERN

Photographed by ALLAN D. CRUICKSHANK, JAMES FISHER and

L. G. KESTELOO

(Plates 13-18)

THE Royal Tern (*Sterna maxima*), which was recorded in the British Isles for the first time in 1954 (see pp. 116-117), is one of the largest of the grey-mantled, black-crowned terns, being considerably bigger than, for example, the Sandwich Tern (*S. sandwicensis*). It is not, however, the greatest of the terns, as its scientific name would imply, for it is smaller than the heavy, gull-like Caspian Tern (*Hydroprogne caspia*), photographs of which we recently published (*antea*, vol. xlvii, plates 61-64). The Royal Tern and the Caspian Tern are very similar, and the difference in size would often not be apparent unless the two species were together. The Royal, however, has a rather less heavy bill, the shape of which is well shown in plate 14; this is reddish-orange in colour, rather paler than that of the Caspian. At the same time the Royal's tail is longer and more deeply forked, and there is less black on the ends of the primaries (see plates 15 and 18). Another significant difference between the two species is in the colour of the forehead, for that of the Caspian Tern is black in the breeding-season, and so heavily streaked with black during the rest of the year that it appears dark; while that of the Royal Tern is normally white, and only black for a short while at the beginning of the nesting-period. A glance at the colonies shown in plates 15 to 18 will illustrate this: in Mr. Fisher's photographs a number, but by no means all, of the birds have black foreheads, but in plate 15, which was evidently taken later in the summer, the majority of the birds have white foreheads. In winter plumage the white area extends to the crown. Like the others of its genus, the Royal Tern has a white rump, white under-parts, and a greyish tail deeply forked. The legs are black. The immature birds are similar to the adults except that the upper-parts are spotted with dusky feathers.

According to A. C. Bent (*Life Histories of North American Gulls and Terns*, 1921, p. 218), the Royal Tern breeds on the Atlantic coast of America from Virginia to Texas, taking in the Bahamas and the West Indies. It also nests on the Pacific side in Lower California, and in Mexico. Throughout the southern portion of its range it is a resident, but north of Florida it appears during the summer only. The winter range extends down to Patagonia and Peru. There is also on the African side of the Atlantic another population of these birds, which is something of a puzzle. J. Fisher and R. M. Lockley (*Sea-Birds*, 1954, p. 21) state

that the species "haunts almost the whole coast of West Africa from Morocco to some hundreds of miles south of the Equator . . . it does not appear to leave this coast, yet no ornithologist has yet seen its nest or even its eggs."

The Royal Tern is highly gregarious, and in some parts of its American range breeds in vast colonies, often associating with Sandwich and Caspian Terns and also Laughing Gulls (*Larus atricilla*). The Laughing Gulls, which to some extent prey on the eggs of the Royal Tern, are shown in several of these photographs (plates 16-18). The Royal Tern's nest is a slight hollow in the sand, with no lining. According to Bent there are usually only two eggs, rarely three. Typically, these are very pale, almost white, marked with small dark spots. As with all terns and gulls there is considerable variation in the colour of the eggs, but these are usually rather distinctive.

The Royal feeds almost entirely on small fish, which it catches by plunging into the water and submerging completely (it seldom swims on the surface, however). The flight is described by Bent as like that of a Common Tern (*S. hirundo*), but less buoyant, as might be expected with a larger and heavier bird. The cry is not so loud and raucous as the Caspian Tern's, and it is pitched higher. Bent describes it as a penetrating squawk, and also mentions a second call something like the bleating of a sheep.

I.J.F.-L.

THE ABNORMAL BREEDING OF BIRDS IN THE WINTER 1953/54

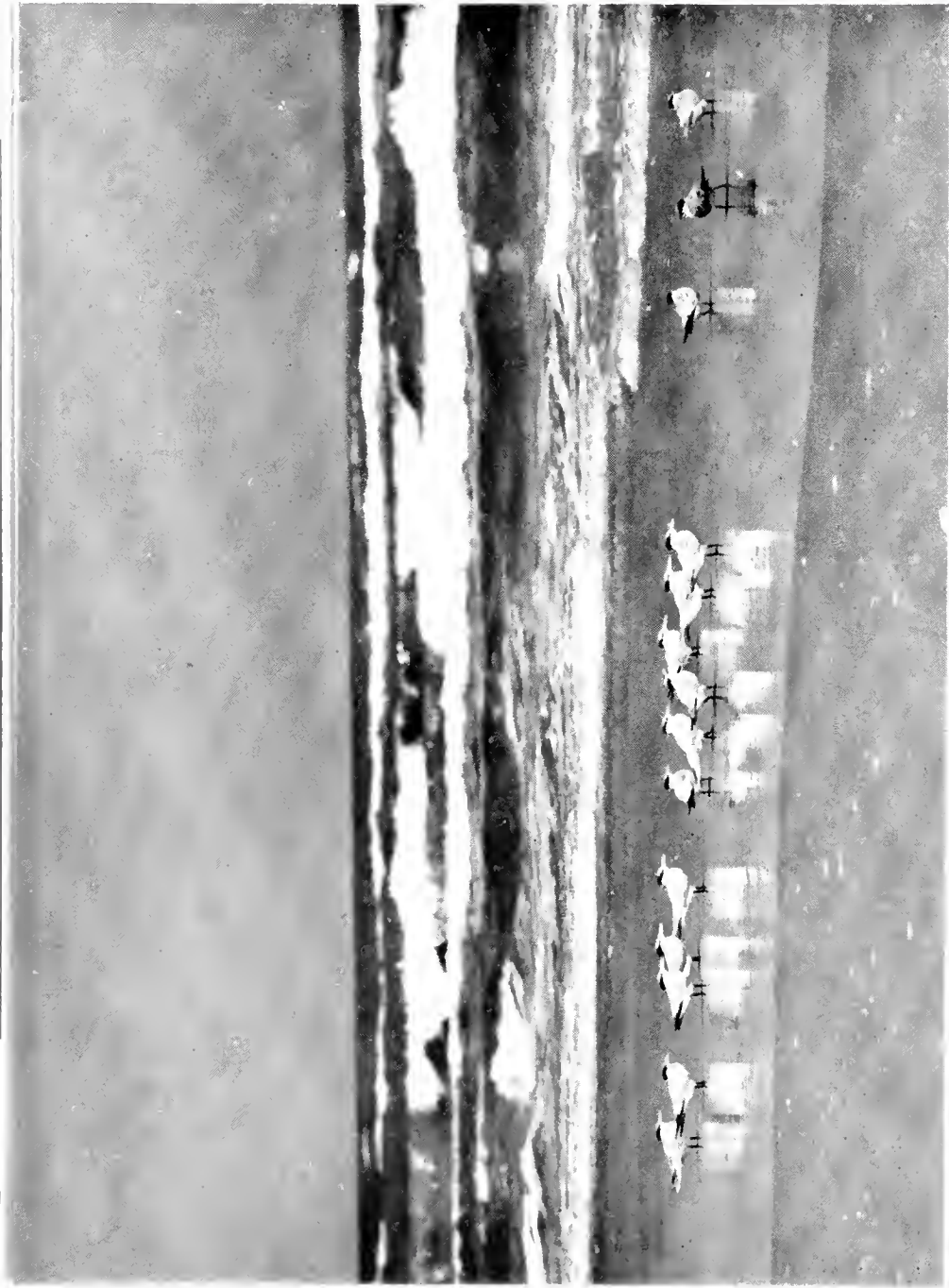
By D. W. SNOW

(*Edward Grey Institute, Oxford*)

THE unusually mild weather that prevailed over the British Isles in November and December 1953 resulted in a considerable outburst of breeding by a few species of resident birds. A number of reports appeared in the Press at the time, and there were many rumours of nests. In March 1954 *British Birds* made an appeal for information on these "freak" nests, which brought in a disappointingly small number of extra records. Since then, a few more records have been published in reports of local ornithological societies and elsewhere. From all these sources it is evident that breeding was widespread, though on a small scale. It is unfortunate that, as it seems, no ornithologist had the opportunity to make detailed observations on any nest, and few ornithologists even saw one. Inevitably, therefore, the data on which this account is based are much less precise than could be desired, and although records which for any reason appeared open to doubt have been rejected, others, for which the evidence is hardly conclusive, have been admitted. In dealing with records of this sort the line between acceptance and rejection is hard to draw, but in this case the general picture is luckily not much affected. Thanks are due impartially to all who sent in records, whether they have been accepted or not.

THE WEATHER

Weather data have been taken from the *Monthly Weather Reports* of the Meteorological Office and from the meteorological records kept at Oxford. October 1953 was, in the words of this report, "dry in most areas; mainly rather dull; mild in Scotland; unusually quiet in England". The weather was not, in fact, at all exceptional, apart from the absence of strong winds in the south. Mean temperature was a little lower than the average for 1921-50 in England and Wales (by 0.4° F.), and a little higher than average in Scotland (by 1.8° F.). November was however unusually mild. The mean temperature for November was notably high, being 3.3° F. above average in all areas—higher than for any other year except one since before 1901. The month started rather cold. Mean temperature was somewhat below average in the first week, but the remainder of the month was very mild, and the normal seasonal drop in temperature was suspended. During the long mild spell there were numerous high maximum temperatures, but few outstanding values. Minimum temperatures were also high. At Oxford the extreme minimum, 35° F., was the highest for November in a record going back to 1881.



From U.S. National Audubon Society

Allan D. Cruickshank

ROYAL TERNS (*Sterna maxima*) ON THE SHORE: AMERICA
 Like the other members of the genus *Sterna*, the Royal Tern is mainly white or whitish with a gray mantle and black on the head. Out of breeding plumage the white of the forehead extends well up on to the crown. Much bigger than a Sandwich Tern (*S. sandwicensis*), this species approaches the Caspian Tern (*Hydroprogne caspia*) in size. (see pages 118-119)



From U.S. National Audubon Society

Allen D. Cruickshank

CLOSE-UP OF ROYAL TERNS (*Sterna maxima*): AMERICA

This shows the shape of the bill which, though not as heavy as that of the Caspian Tern (*Hydroprogne caspia*), is much greater than those of the other *Sterna* species; it is reddish-orange in colour while the legs are black. The colour of the forehead is usually a useful difference between the Royal and Caspian Terns, for the former has at most times, as here, white extending to the crown, while the latter's is black, or heavily streaked with black.



From U.S. National Audubon Society

L. G. Kosteloo

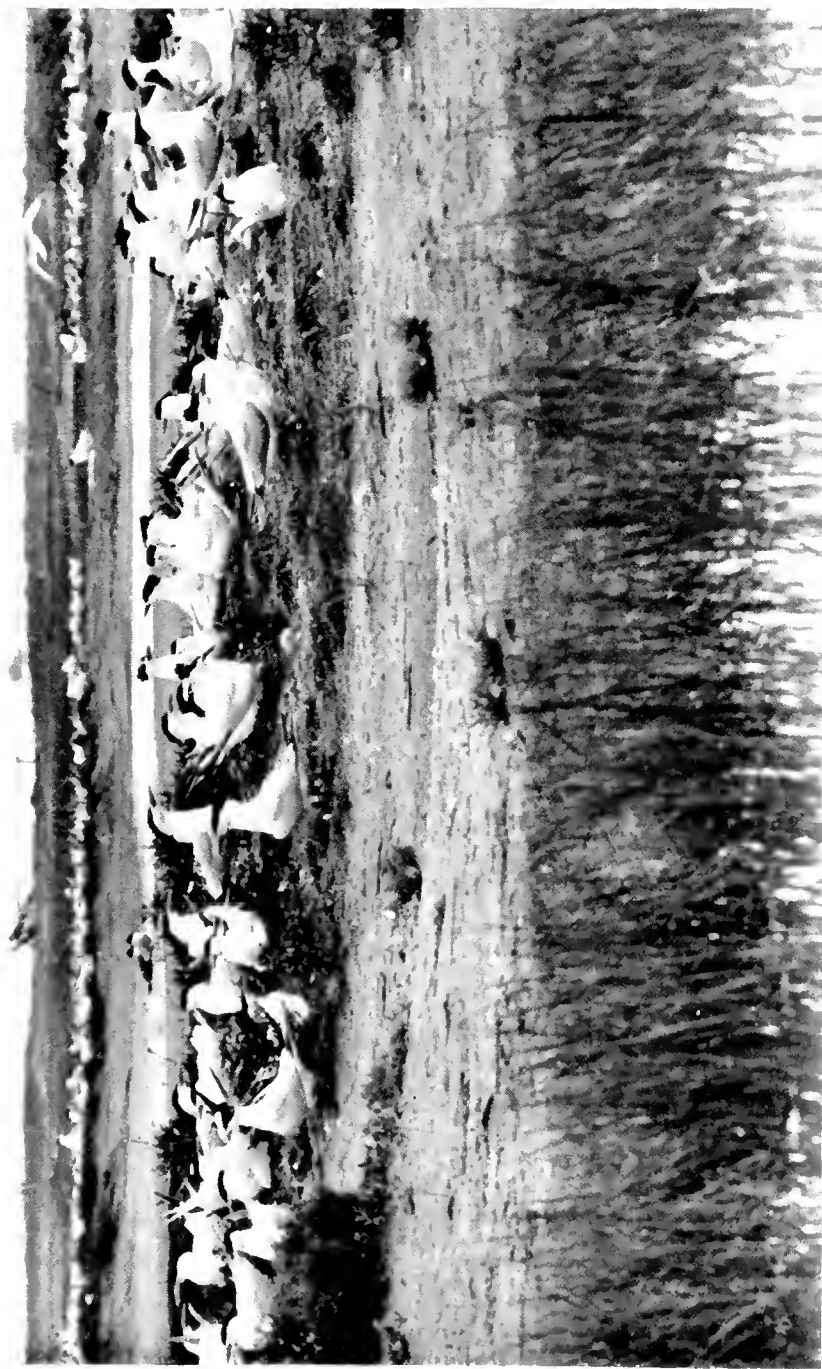
ROYAL TERNS (*Sterna maxima*) IN BREEDING COLONY: AMERICA

This photograph was evidently taken later in the season than those on plates 10-18, for several young chicks can be seen, and a comparison will show that, whereas in those other plates a number of the birds have the dark forehead that is retained only for a short while early in the breeding-season, nearly all the birds in this plate have lost this feature. (see page 118)



James Fisher

ROYAL TERNS (*Sterna maxima*) AT NESTING COLONY: LADIA ANN ISLAND, TEXAS, MAY 1953
A number of these birds, as can clearly be seen, have only a limited amount of white on the forehead, while in others the black extends down to the bill. This is a feature of the early part of the breeding-season (cf. plate 15). The bird in the foreground is a Laughing Gull (*Larus atricilla*), a species which is often found in the same areas as the Royal Terns and which to some extent preys on their eggs.



James Fisher

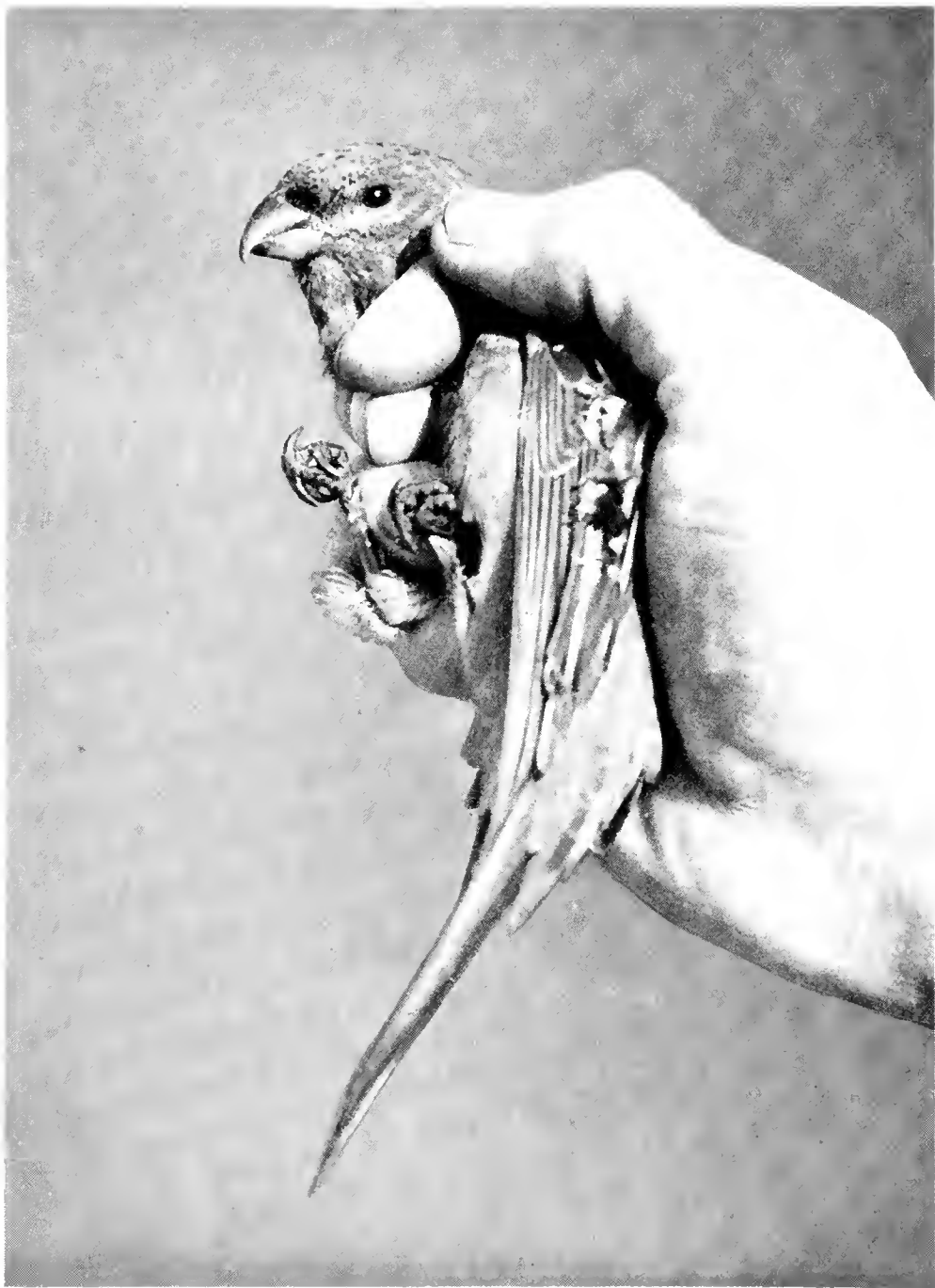
ROYAL TERNS (*Sterna maxima*) AT NESTING COLONY: LUDIA ANN ISLAND, TEXAS, MAY 1953
 Again the majority of the birds are shown to have the black extending down the forehead. An egg is visible in the centre of the picture; these are normally laid in an unlined hollow in the ground and the clutch usually consists of two. Laughing Gulls (*Larus atricilla*) can be seen in the middle distance.



James Fisher

ROYAL TERNS (*Sterna maxima*) AT NESTING COLONY: LYDIA ANN ISLAND, TEXAS,
MAY 1953

The Royal Tern's tail is longer and more deeply forked than that of the Caspian Tern (*Hydroprogne caspia*), though this is hardly apparent here, and there is less black at the end of the primaries. The flight is described as like that of the Common Tern (*S. hirundo*) but less buoyant. Laughing Gulls (*Larus atricilla*) in the foreground. (see pages 118-119)



W. U. Flower

PINE GROSBKAK (*Pinicola enucleator*) ON THE ISLE OF MAY, 9TH NOVEMBER 1954
 The bird was an adult female. This photograph gives an indication of its size—about that of a Starling (*Sturnus vulgaris*)—as compared with a hand, and also shows the fairly long tail and the white on the wings. It has something of the appearance of an outsize Crossbill (*Loxia curvirostra*). (see pages 133-134)



W. C. Flower

PINE GROSBEEK (*Pinicola enucleator*) on the Isle of May, 9th November 1954

This was taken just after the bird was released and well shows the massive head and heavy, conical bill. The light-coloured bars formed by the tips to the wing-coverts are also apparent. The bird was crouching in this way, in between intervals of feeding, when it was first seen on 8th November. (See page 133)

December continued unusually mild. It was very dry, dull in England and Wales, and sunny in Scotland. Mean temperatures exceeded the average (for 1921-50) by 4.6° F. in England and Wales, and 2.9° F. in Scotland. This was the mildest December in Great Britain since 1934. Temperatures were exceptionally high from 2nd to 4th December. Night temperatures were also very high at some places. At Oxford there was no air frost in any of the four months September-December.

January 1954 was changeable. The first ten days were cold, the next fortnight mainly mild, and then from 23rd January to the end of the month it was unusually cold. The long mild spell thus ended almost exactly at the end of the year.

In Fig. 1 the daily maximum and minimum temperatures at Oxford are plotted from mid-October to mid-January, together with the mean monthly maxima and minima for the 10 years up to and including the winter 1953/54. It will be seen that maxima fluctuated fairly regularly about the mean except for a period round the end of November and beginning of December, when they were consistently above the mean for a fortnight. Minima fluctuated rather more erratically. There was a period of 6 days in mid-November when they were consistently above the mean, and another long period of nearly 30 days, in the second half of November and first three weeks of December, when they were consistently above the mean on all days except one, rising above

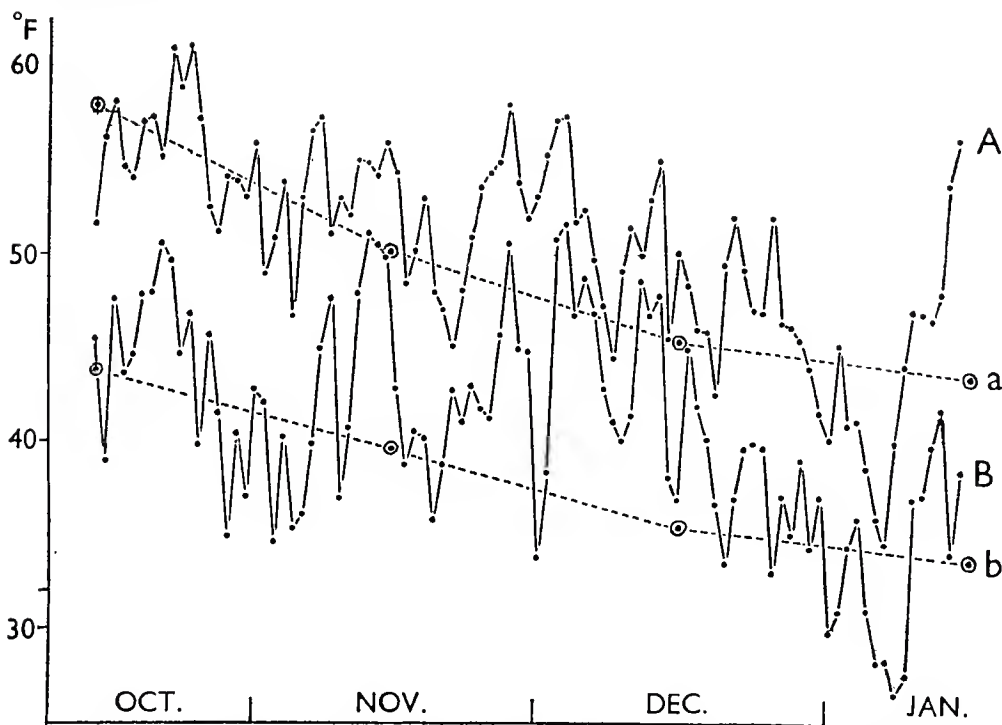


FIG. 1.—DAILY MAXIMUM (A) AND MINIMUM (B) TEMPERATURES AT OXFORD IN THE WINTER 1953/54, COMPARED WITH THE MEAN MONTHLY MAXIMA (a) AND MINIMA (b).

mean maximum temperatures on several days in the first half of December.

SPECIES BREEDING

Blackbirds (*Turdus merula*), Song Thrushes (*T. philomelos*), Robins (*Erithacus rubecula*), Starlings (*Sturnus vulgaris*) and House Sparrows (*Passer domesticus*) were the chief species reported as breeding, but because of the inaccessibility of their nests few details are available for the last two. Most information is available for the Blackbird and Song Thrush, but clearly this is mainly due to their abundance and the accessibility of their nests and does not necessarily mean that proportionally more of these two species were nesting than of other less common resident species. In addition there is one record of a Dunnock's (*Prunella modularis*) nest with eggs, one of a Skylark's (*Alauda arvensis*), several reports of Rooks (*Corvus frugilegus*) building and one report of a Magpie (*Pica pica*) nesting.

As the Appendix shows, breeding records came from many parts of England. The only definite breeding records for Scotland were from the extreme south (Roxburghshire), and in addition Rooks were reported as building near Edinburgh on several dates in December and early January. The absence of records from further north is probably due only to the scarcity of observers; November was as mild in Scotland as in England and December only a little less mild.

Details of all the nests for which there is some satisfactory information are given in the Appendix, and their dates are summarized in Table I. Some conventions have had to be adopted because of the imprecise nature of the data. The date for each nest is taken as the day on which the first egg was laid. For most nests this can only be worked out as a more or less extensive "bracket", and in working out this bracket it has had to be assumed that nests were occupied when first found unless there was evidence to the contrary. In allocating the nests to a period in Table I, the middle point of the bracket has been taken; since the periods used are of half a month, the error involved should not

TABLE I—BREEDING DATES (CALCULATED DATES OF FIRST EGG) OF SIX SPECIES IN THE WINTER 1953/54.

	Song			House		
	Blackbird	Thrush	Robin	Starling	Sparrow	Skylark
First half November	—	3	1	—	1	—
Second „ „	5	2	1	2	—	—
First half December	5	4	2	)	1	1
Second „ „	2	1	—	)₁	1	—
First half January	1	—	—	—	—	—

be great. Hardly any clutch-sizes can be determined with certainty. In the Appendix, clutch-sizes which appear to be well founded are shown without a bracket, those based on a mere statement of how many eggs a nest contained, with no indication whether the clutch was complete or not, are bracketed, and those based on the size of broods, or broods plus unhatched eggs, are square-bracketed.

BLACKBIRD. Records are available for 13 nests which contained eggs or young. In ten of these the clutch was begun in the second half of November or first half of December. Of the two latest nests, from the same wood in Roxburghshire, one was probably started on 31st December, and the other at the very end of December or in the first few days of January. Considering that some of the clutches were probably incomplete when recorded, clutch-size was not abnormally low. The fate of only five nests was known. Two were deserted or destroyed, both apparently due to human interference, and young hatched in three. Of these three, young were fledged from one, the young died in one, probably due to exposure to the weather, and the fate of one was unknown.

SONG THRUSH. Records are available for ten nests which contained eggs or young (including one based on observation of newly fledged young). Song Thrushes started to nest rather earlier than Blackbirds, just as in a normal breeding-season. Clutch-size seems to have been similar to the Blackbird's. The fate of most of the nests was known. Young hatched in five, and fledged from three of these, the fate of the other two being unknown. One of the clutches known not to have hatched was incubated for 18 days (20th December-7th January), and then deserted; the eggs were later found to be infertile.

ROBIN. Robins apparently bred at about the same time as the Song Thrushes. Of the four nests, the fate of two was unknown, one was deserted, and young probably fledged from one.

OTHER SPECIES. None of the information on Starlings is very precise, though it seems that a good number must have bred and succeeded in hatching young, since there were several unconfirmed reports of young Starlings besides those admitted here. Information for the House Sparrow is even more scanty and cannot be summarized. Reports of Rooks building have already been mentioned, but there is no evidence that any got beyond this stage; unsatisfactory records of young Rooks and Jackdaws have had to be discarded. Details of the single Dunnoek's and Skylark's nests are given in the Appendix.

DISCUSSION

Table I shows that, taking all species together, most breeding started in the second half of November and first half of December. It will be recalled that the weather in October was not exceptional,

and that the first week of November was rather colder than usual; but that after the end of the first week of November the normal seasonal drop in temperature failed to occur and the rest of November and December remained exceptionally warm. It seems clear that the main outburst of breeding was stimulated by this abnormal prolongation of warm weather. It may be noted that, as the Appendix shows, the nests allocated to the first half of November in Table I could all have begun after the end of the first week, and most of them, since they lie within rather wide brackets, in the second half of November.

The Blackbird and Song Thrush, the only species for which some idea of breeding success can be gathered, were not notably unsuccessful. Indeed it seems that many Song Thrushes, in particular, may have effectively added an extra brood to their year's production of young. It would be extremely interesting to know whether those individuals that bred were able to start again at the normal time in the spring of 1954. This raises the wider problem of the selective factors operating against autumn breeding. If the climate of this country were to become only a few degrees warmer in autumn, many resident birds, if they retained their present physiological adjustment to their environment, would start breeding in autumn, as they did in 1953. But there is little doubt that a regular autumn breeding season would not be established, just as it has not been in southern Europe where autumn temperatures are comparable to those prevailing in this country in 1953. There are several reasons why selection might eliminate a regular autumn breeding-season, even if conditions were normally suitable for raising some young. Individuals breeding in autumn might be physiologically incapable of breeding again with full efficiency in the following spring, when conditions for raising young would be even more favourable. Or they might not be able to lay up sufficient food reserves to survive the coming winter as well as those that did not breed. Or, even if these disadvantages were not of sufficient force, the young might not on the average survive the coming winter in sufficient numbers to offset the extra mortality which a breeding season undoubtedly entails for the adults. These factors are not of course mutually exclusive: all might operate together to prevent regular autumn breeding.

APPENDIX

The italicized dates of first egg, clutch-size, etc., do not form part of the original reports, but are calculated from them in the way described on page 122; they are used as the basis for Table I and for other generalizations made in the text.

Blackbird

1. Sandhurst, Berks. Nest with 4 eggs exposed during gardening operations, approx. 3rd Dec.; deserted. (Telephone communication to Edward Grey Institute.) *First egg: 17th-30th Nov. Clutch: (4).*

2. Fordingbridge, Hants. Bird sitting on eggs, 7th Dec. (J. Ash.) *First egg: 20th Nov.-5th Dec.*
3. Wiston, Sussex. Pair with eggs, 6th Dec. (*Sussex Bird Report* 1953.) *First egg: 20th Nov.-5th Dec.*
4. Hants. Nest with 2 eggs, approx. 6th Dec. (Letter to *Field*, 6th Dec. 1953, from Sir F. Hervey-Bathurst, and pers. comm.) *First egg: 22nd Nov.-5th Dec. Clutch: (2).*
5. Carisbrooke, I.O.W. Nest with eggs, first days of December. (*I.O.W. County Press* 5th Dec. 1953, per J. Stafford.) *First egg: second half November.*
6. Hereford. Nest with 3 eggs destroyed during hedging operations, 9th Dec. (*Hereford Orn. Club Report* 1953.) *First egg: 25th Nov.-7th Dec. Clutch: (3).*
7. Carnforth, Lancs. Nest with 4 eggs found during second week December; not known to have hatched. (Eric Hardy, *Liverpool Daily Post* 21st Dec. 1953.) *First egg: 22nd Nov.-11th Dec. Clutch: (4).*
8. Penrith, Cumberland. Nest in a byre at Great Strickland; 3 eggs, 16th Dec. (N. Thorburn in *The Field Naturalist* January 1954.) *First egg: 1st-14th Dec. Clutch: (3).*
9. Totland Bay, I.O.W. 3 young in nest, presumably 1st Jan. 1954. Fate unknown, but considered possible that they survived. P.S. gives 3rd Jan. as date on which young were in nest. (*I.O.W. County Press* 2nd Jan. 1954, per J. Stafford; letter from F. G. Clegg, 2nd May 1954; letter from P. Sleightholme, 4th May 1954.) *First egg: 6th-17th Dec. Clutch: [3]. Brood: 3.*
10. Bristol, Glos. Nest with 4 eggs, near Almondsbury, just before 25th Dec. (A. E. Billett in *Bristol Nat. Soc. Report* 1953.) *First egg: 7th-20th Dec. Clutch: (4).*
11. Dinmore, Hereford. Nest with 2 eggs, 25th Dec. (*Hereford Orn. Club Report* 1953.) *First egg: 11th-24th Dec. Clutch: (2).*
12. Newcastleton, Roxburghshire. 4 young and one undeveloped egg, 22nd Jan. 1954. Young flew on 31st Jan. Nest well sheltered, in spruce. (S. Cruickshank in *Gamekeeper* April 1954, and pers. comm.) *First egg: approx. 31st Dec. Clutch: [5]. Brood: 4.*
13. Newcastleton, Roxburghshire. Nest in same wood as No. 12, found on 18th Jan. 1954. 3 young perished, probably of exposure, at approx. 5 days old. (Uncertain what nest contained when found.) (S. Cruickshank in *Gamekeeper* April 1954, and pers. comm.) *First egg: 30th Dec.-3rd Jan. Clutch: [3]. Brood: 3.*

Song Thrush

1. Flackwell Heath, Bucks. Nest with 2 eggs, 11th Nov., beside footpath. A few days later eggs gone and nest disturbed. (C. A. Smith in *Country-Side* Spring 1954, and letter to Editor of *British Birds*, 12th May 1954.) *First egg: 28th Oct.-10th Nov. Clutch: (2).*
2. Norwich. Young in nest, early December. (E. A. Ellis in *Norfolk Bird Report* 1953.) *First egg: mid-November (limits approx. 2nd-22nd).*
3. Washington, Sussex. Pair with young, 6th Dec. (*Sussex Bird Report* 1953.) *First egg: 7th-21st Nov.*
4. Ellesmere, Salop. 4 three-quarter-fledged young in nest, 14th Dec. Young in nest 2-3 days later and left nest in natural way. (D. Pillsbury in *Country-Side* Spring 1954, and letter to Editor of *British Birds*, 24th Apr. 1954.) *First egg: approx. 18th Nov. Clutch: [4]. Brood: 4.*
5. Marks Tey, Essex. Nest with 3 eggs, 2nd or 4th Dec. (reports of dates and nest-site conflicting, but probably only one nest involved); deserted, probably due to interference. (*News Chronicle* 3rd Dec. 1953, per H. E. Pounds; letters from G. Mountfort, 8th Dec. 1953 and 9th Feb. 1954.) *First egg: 19th-30th Nov. Clutch: (3).*
6. Hindhead, Surrey. Nest with eggs, 15th Dec. (Letter from C. Densley, 4th March 1954.) *First egg: 29th Nov.-14th Dec.*
7. Cobham, Kent. Young birds seen in nest "after Christmas"; two days

later two young just out of nest. Still being fed in mid-January. Possible that these reports involve two different nests. (Letter from U. Benecke, March 1954.) *First egg: beginning December.*

8. Haslemere, Surrey. Nest with 4 eggs, 17th Dec.; abandoned during cold weather in January. (Letters from C. Densley, 4th and 11th March 1954.) *First egg: 1st-14th Dec. Clutch: (4).*

9. Hailsham, Sussex. Nest built in early December; first egg 15th Dec.; incubation started 20th Dec. Nest deserted, 7th Jan.; examined on 12th Jan., contained 3 infertile eggs. (E. Salvage in *Country-Side Spring 1954; Sussex Bird Report 1953.*) *First egg: 15th Dec. Clutch: 3.*

10. Rainham, Essex. Two fully fledged young seen, 30th Jan. 1954, unaccompanied by parents. Tails incompletely grown, and still with traces of down. (Letter from R. Spencer, 4th Feb. 1954.) *First egg: 25th-30th Dec. (on assumption that they were 15-20 days old when seen).*

Robin

1. Wimborne St. Giles, Dorset. Young in nest about end November; believed to have fledged successfully. (Mr. Webb, per K. B. Rooke.) *First egg: first half November.*

2. Washington, Sussex. Nest with eggs, 6th Dec. (*Sussex Bird Report 1953.*) *First egg: 20th-Nov.-5th Dec.*

3. Cumberland. Nest with 4 eggs, 16th Dec.; bird sitting. (*Country-Side Spring 1954; letter from J. A. McRitchie, 25th March 1954.*) *First egg: 1st-13th Dec. Clutch: 4.*

4. Wimborne, Dorset. Nest in chassis of mobile crane; building begun early November; 5 eggs laid by 12th Dec. Incubated for some time in spite of moving of crane. Deserted during severe weather just after Christmas, but may have been disturbed. (A. Willis and A. Creamer, per Wimborne Timber Co.; all per K. B. Rooke.) *First egg: approx. 8th Dec. Clutch: (5).*

Starling

1. Camberley, Surrey. Building mid-November. Later (?date) young heard squeaking; nest inaccessible. (Letter from Maxwell Knight, 14th Jan. 1954.) *First egg: probably second half November.*

2. Brighstone, I.O.W. Starling's egg found on lawn, 29th Nov. (*I.O.W. County Press 5th Dec. 1953, per J. Stafford.*)

3. North Cowton, Yorks. Probably 4 young in nest on 20th Dec., and parents seen carrying food. Young last heard on 8th Jan., and probably killed by 13° frost on following night. Nest inaccessible. (J. P. Utley in *Darlington Times* 2nd and 12th Jan. 1954, and letter to Editor of *British Birds*, 28th Jan. 1954.) *First egg: 27th Nov.-2nd Dec.*

4. Penrith, Cumberland. Young in nest at Christmas. (*Penrith Observer* January 1954, per R. W. Robson.) *First egg: late November or early December.*

House Sparrow

1. Widnes, Lanes. Nest with eggs found in third week November. (Eric Hardy, *Liverpool Daily Post* 23rd Dec. 1953.) *First egg: 1st-19th Nov.*

2. St. Helen's, Lanes. Remains of egg, probably not more than two days old, picked up in garden, approx. 22nd Dec. (A. J. Bailey, per Eric Hardy.)

3. Near Northwich, Cheshire. Nest with 3 eggs, 11th Dec. (A. W. Boyd in *Manchester Guardian*, 15th Dec. 1953.) *First egg: 26th Nov.-9th Dec.*

Duncock

1. Yateley, Surrey. Nest with eggs, presumably in December. (Letters from Maxwell Knight, 14th and 26th Jan. 1954.)

Skylark

1. Appleby, Westmorland. Nest with 2 eggs in turnip field, 19th Dec. (N. Thorburn in *The Field Naturalist* January 1954, per R. W. Robson.) *First egg: 5th-18th Dec.*

NOTES

Food-offering by Great Crested Grebe.—On 28th April 1954 a nest of the Great Crested Grebe (*Podiceps cristatus*), built high above the water level on a shingle islet at Hamper Mill Lake, Hertfordshire, was under observation. One of the pair was on the nest. The other bird (the assumed male) came up from a dive about ten yards from the nest with a silvery fish, two or three inches long, held cross-wise in its bill. It swam to the nest and elambered up to the platform (which was about two feet above the water), and offered the fish to its mate, which was brooding in a resting posture with head and neck back on its shoulders. There was no response and so the male continued offering the fish to it by stroking it once or twice on the female's breast and then putting it to the bill. This was repeated about ten times, but after one and a half minutes, with still not the slightest response from the brooding bird, the male swallowed the fish itself before returning to the water.

HUGH JONES

Little Egret in Perthshire.—On 11th May 1954 I was informed by three boys, John Spence, Ian Bell, and Alistair Work, that they had seen that afternoon near Comrie, Perthshire, an unusual bird of a pure white colour and rather like a Heron (*Ardea cinerea*). I immediately proceeded with the boys to the spot, which is a damp meadow with trees and a stream on one border and a sluggish water-filled ditch on the other. This meadow is very long, and at the bottom of it is a fairly large pond surrounded by rushes, and with tall trees at the edge. The three boys quietly walked down the meadow and had got less than half way when up rose a snow-white heron. In flight the wings gave an impression of being very rounded—one could say like owl's wings in shape, but of course far larger. The bird flew to the pond and alighted in a tall tree, where we had excellent views of it.

It was a good bit smaller than a Heron; the whole of the bill and the legs were jet black (I failed to see the colour of the feet); the plumage was of dazzling, spotless, snowy-white, and the beautiful lace-like texture of the upper scapular feathers was very noticeable; the neck was slender and elegant; I could observe little if any crest on the bird.

From these details it appears obvious that the bird could have been no other than a Little Egret (*Egretta garzetta*).

J. RALSTON CRAWFORD

Little Egret in Shetland.—On 15th May 1954 Mr. Sinclair Moncrieff noticed a small, pure-white heron feeding on a reedy patch below his home on the west side of Loch Spiggie, Shetland. On the following morning he pointed it out to Mr. Hugh Crawford, who in turn informed me. Mr. Moncrieff and Mr. Crawford had

already identified the bird as a Little Egret (*Egretta garzetta*), an identification which I could confirm without hesitation, having been familiar with the species in both East Africa and Cape Province. The bird was an adult in full plumage and the crest and breast plumes were very long and obvious. Then, and on several subsequent occasions I had the bird under view at close range, and once I was within 20 feet of it in a drifting boat without its taking any notice. When we first saw it, the Egret seemed in fine plumage, dazzlingly white, but towards the end of its stay here it had taken on a bedraggled appearance. It was last seen on 14th June.

TOM HENDERSON

Little Egret in Sutherland.—On 22nd June 1954, while motoring between Bonar Bridge and Lairg, Sutherland, I saw a white heron standing on a stone in the River Shin. It was raining heavily at the time and visibility was poor, but closer observation showed the bird to be a Little Egret (*Egretta garzetta*). The bird was extremely wary and flew immediately the car door was opened. However, it was later found about 500 yards downstream where the following observations were made before it again flew off, this time out of sight round a bend of the river: pure white plumage with long crest feathers clearly visible; black legs contrasting sharply with the yellow feet; black bill; eye appeared dark with light coloured iris. In flight the yellow feet were very conspicuous, even at some distance, as were the rounded wings and slow purposeful beats. The profile, with slender neck drawn in and legs projecting, was similar to that of the Heron (*Ardea cinerea*) in flight.

This is the first record of the Little Egret for Sutherland.

J. G. McDOWELL

[In connection with these three records of Little Egrets in Scotland in 1954 (it is not wise to attempt to say how many individuals were involved), it is worth adding that we understand from Mr. Kenneth Williamson that a Little Egret was recorded in Newfoundland on 8th May 1954, which suggests that it may have been part of the same drift movement.

We did not publish details of the Little Egrets recorded in Britain in 1953, when for the second year running (*cf.* vol. xlv, pp. 255-258) the species was recorded in four counties; so that in 1952/54 there were no less than 11 records of this bird, which before 1952 had only been noted in the British Isles on some twelve occasions. The 1953 records (based on information given in the Bird Reports for Devon, Cornwall, Suffolk, and Norfolk) were as follows: adult, Otter Estuary, Devon, 16th-24th May; adult, Camel Estuary, Cornwall, 19th May-8th June; one, Minsmere, Suffolk, 19th May; adult, Cley, Norfolk, 23rd-24th May and 30th May-4th June.—*ENDS.*]

Squacco Heron in Glamorgan.—A Squacco Heron (*Ardeola raloides*) was identified on 17th May 1954 by Mrs. G. E. Blundell on a small lily-pond in her grounds at Porthcawl, Glamorgan. It had possibly been in the neighbourhood for the previous two or three days, since one of Mrs. Blundell's maids saw "a large white bird" flying round the grounds on 15th May, and an unidentified white bird had been seen flying from a similar small pond in the grounds of Col. W. H. C. Llewellyn's residence at Bridgend, six miles away, on the 14th.

I myself first saw it on the evening of the 19th May, when I watched it for some three hours. During this time it stood for long periods on the floating water-lily plants with its neck drawn in and occasionally turning its head. At times, however, it would walk across the surface of the pond on the water-lily leaves with neck extended, picking up what appeared to be insects. It could be watched from 40 to 50 yards without showing any alarm, and at times would allow an approach to within 25-30 yards behind some small bushes; but at any attempt to get nearer it would take wing, fly round at a height of 50-60 feet and perch in one of the tall trees nearby. It appeared to be an adult: when at rest, with neck drawn in, the long plumes of the crest extended quite half-way down the back, but it was not in full summer plumage, as the lower neck and sides of the breast were striped brown on buff.

The bird was last seen on the 30th May. Enquiries to find out whether it was seen anywhere else in Wales brought no result.

H. MORREY SALMON

Squacco Heron in Cambridgeshire.—On 22nd May 1954, a Squacco Heron (*Ardeola raloides*) was observed by G. M. S. Easy, D. A. Jones, and myself on Milton Fen, near Cambridge. The area is a swamp, with pools surrounded by willows and rushes. The bird was watched for considerable periods both that day and on the 23rd, and a detailed description was obtained. The bird could not be found on the 24th and it appeared to have left, but on the 26th it returned and then remained in the area until 2nd June, during which period it was also seen by A. E. Vine.

In flight the wings and tail showed very white against the brownish-buff back. On the ground very little white was visible, and the bird appeared brownish-buff; the bill was heavy and black; the legs were yellowish-orange; the head, neck and breast feathers were buff streaked with brown. Closer views showed that the bill was black shading to grey at the base, that there were two small plumes, light buff in colour, and that the eye was surrounded by a ring of greyish yellow. When standing the bird drew in its neck giving it the appearance of a small Bittern (*Botaurus stellaris*).

D. FARREN

[We have received a very detailed description from Mr. G. M. S.

Easy, which will remain in our files. He makes the additional points that the bird apparently roosted in trees, and that its food appeared mostly to be of water-snails and minnows. We also understand that what was probably the same bird was first seen by the Cam at Fen Ditton, not far away, on 20th May.—EDS.]

Wheatear in Norfolk in January.—On 23rd January 1954 I saw a female Wheatear (*Ænanthe ænanthe*) by a chalk pit on the coast road near Cley, Norfolk. A short while later the bird was seen by Mr. W. Bishop. JUDITH M. FERRIER

[There are very few January records of this species, but it may be worth adding that at the end of January 1952 a male described as "somewhat dejected" spent a few days on a farm on the coast near Howick, Northumberland. Frosts were severe at the time. This is recorded by Dr. E. A. R. Ennion in the *Ornithological Report for Northumberland and Durham* for 1952.—EDS.]

Black-eared Wheatear in Hampshire.—On 18th September 1954 we saw a Black-eared Wheatear (*Ænanthe hispanica*) on Farlington Marshes, Hampshire. There were several Wheatears (*Æ. ænanthe*) in the area, but the bird kept to itself, being perched on fence posts for most of the time. We took the following description: very noticeable, squarish black eye-stripe; above this was a thin white line similar to that in a male Redstart (*Phœnicurus phœnicurus*), but not so white; the crown was grey, the mantle buff, and the closed wing black (there was a light patch near the carpal joint, not actually on the wing itself); the tail pattern was very much like a Wheatear's; the breast was a very striking orange-buff which terminated rather sharply, and the lower breast, belly and flanks were white, as was the chin; the legs and bill were black. It was shown later to four other people, one of whom, P. Smith, had seen the species in the Middle East.

P. F. LE BROcq, C. J. HENTY and G. H. REES

Pied Wheatear in Dorset.—A Pied Wheatear (*Ænanthe leucomela*) was present at Portland Bill, Dorset, from 17th to 19th October 1954. It presented excellent opportunities for study in the field, and it was subsequently trapped. In view of the extreme rarity of this species in western Europe (there are two past records from Scotland, two from Heligoland and one from Italy), it may be of interest to give a detailed account of the bird's appearance in the field.

It was first seen by J.S.A. with R. Bland at 1700 hours G.M.T. on 17th September whilst feeding on a grassy bank at the top of a low sea-cliff near the tip of Portland Bill. The first impression was of a wheatear with rather striking brownish-grey upper-parts and almost white lower breast and belly. In spite of the failing

light, its remarkable fearlessness permitted an approach to within 12-15 feet. It fed continuously as we watched it, and practically ignored the many sightseers at the Lighthouse nearby. The following description was then obtained: size, about that of Wheatear (*Æ. ænanthe*) or slightly smaller; dark (?black) bill and eye; whole of upper-parts a light brownish-grey with apparent slight mottled effect; upper breast fairly dark buff, and *distinctly demarcated* from *almost pure white under-parts*; palish edgings to (?primary) coverts and to edge of secondaries; typical wheatear tail-pattern, but brief glimpse in flight suggested more extensive white on rump; supercilium barely noticeable; legs black. After consulting *The Handbook* it was considered that the bird might be either a Pied or a Black-eared Wheatear (*Æ. hispanica*).

Fortunately it was still present at dawn on the following morning, and with my wife (J.W.A.) and W. P. Lewis, we obtained a further description in perfect conditions of light. The previous evening's observations were confirmed, and additional information obtained. The pectoral band was described as fairly dark buff with a tinge of orange, being slightly darker towards the sides, with a slight pale division at the sternum. Definitely no trace of a dark line between nostrils and eye: lores same colour as crown, possibly slightly paler. Throat slightly paler than breast (pale grey brown). Only a slight mergence of pale buff-brown between pectoral band and lower breast. Rest of under-parts off-white (not pure white even in bright sun on white-washed wall). Whole frontal area of wing (lesser coverts, etc.) same colour as upper-parts and definitely showing no contrast. Bastard wing darker than lesser coverts. Primaries and secondaries dark brown with buffish edges. Slight tinge of buffish at sides of vent (lower flanks). Legs appeared shorter than those of a Wheatear, and bird lacked the upright stance of that species (i.e., tarsi at angle of 45° to ground). Call note, heard several times, resembled that of the Wheatear.

Feeding habits: never seen hopping on ground searching for insects as Wheatear, but dropped from above like a Stonechat (*Saxicola torquata*), usually returning to original perch. It was once seen to hover (over a baited spring-trap), and on several occasions flew out for four or five yards to pick up an insect on the ground. Its time was divided between one perch a foot above the ground, and a wall five foot high. When disturbed it frequently flew to the top of a hut ten foot high.

From the description it was decided that the bird was almost certainly a female Pied Wheatear, but for definite identification the bird should be caught. Five spring-nets baited with meal-worms were placed round its lowest perch, and after a wait of six hours the bird was finally trapped.

An examination in the hand then showed that it could only be a female Pied Wheatear, unless one of the closely related species,

Æ. moesta, *monacha* or *lugens*, which are not described in *The Handbook*. Dr. K. B. Rooke was contacted and brought with him some additional literature on wheatears which confirmed our identification. The bird was kept overnight, then ringed and released at 0630 hours on 19th October. Later that day it was watched feeding by Miss M. D. Crosby.

JOHN ASH

[Mr. Ash has provided us with a copy of the very detailed description that was taken of the bird in the hand.]

A short paper on the problem of the identification of the female Picd Wheatear, by John Ash and Dr. K. B. Rooke, will be appearing in a future number of *British Birds*.—EDS.]

Black Wheatear in Kent.—On 17th October 1954 between Dungeness Point and Littlestone, Kent, I saw a wheatear fly up from the shingle and alight on a garden wall some ten yards from the road. It was at once apparent that the bird was of a uniform dull sooty brown, except for the rump and the upper tail-coverts which were white, and the tail pattern which was that typical of wheatears, with white outer feathers and black terminal band and central feathers. I had the bird under observation for about three minutes at ranges of 8-20 yards, and when it was close to me it was possible to see that, while the mantle was sooty brown, the rest of the dark parts were chocolate-brown or mahogany. It appeared to be of the same size, shape and habits as a Wheatear (*Enanthe cenanthe*). There was no vestige of an eye-stripe, and the legs and bill were blackish. Unfortunately, I did not notice the colour of the under tail-coverts, but after examining skins at the British Museum (Natural History) I was quite satisfied that the bird was a female (or possibly immature) Black Wheatear (*Æ. leucura*). Several of the skins I examined were almost identical with the bird I saw, particularly with regard to the rather rich or rufous mahogany of the under-parts, and the sooty brown appearance above.

M. L. R. ROMER

Arctic Warbler trapped at Fair Isle.—On 2nd September 1954 I put a small phylloscopine warbler into the Vaadal Trap at Fair Isle. When I took it from the catching-box I was immediately impressed by the unusual length and paleness of the superciliary stripe, and a glance at the wing confirmed that this was the first Arctic Warbler (*Phylloscopus borealis*) we have trapped.

It proved to be a young bird of the year in the dark greenish-olive plumage and with remiges and rectrices unworn and the two wing-bars unabraded: these were formed by pale creamy tips to the outer greater coverts, and yellow spots on the inner median coverts. The tips of the primary coverts were black. The outline of the head was more like a Sedge Warbler's (*Acrocephalus schænobæmus*) than a Willow Warbler's (*Ph. trochilus*) with its

strongly-made bill. The superciliary stripe differed from that of other British *Phylloscopi* not only in its remarkable length, reaching almost to the nape, but in the fact of its becoming paler behind the eye.

The legs and lower mandible were pale brown, the upper mandible dark brown. The measurements were: chord of wing 65 mm., bill from skull 13 mm., tarsus 20 mm., tail 48 mm., and the bird weighed 8.98 gm. The 1st primary was as long as the primary coverts and the 2nd 5 mm. shorter than the 3rd and 4th, which were equal and longest; the 5th, 6th, and 7th primaries were respectively 1 mm., $6\frac{1}{2}$ mm. and 10 mm. shorter, and the 3rd, 4th and 5th were emarginate on the outer webs. It is perhaps worth noting that this wing-formula is substantially the same as in many juvenile Willow Warblers trapped in the autumn of 1954, except that these have the 1st primary from 4-6 mm. longer than the primary coverts. It was not possible to observe the bird closely in the field following its release, but field-characters of this species have already been given in some detail (*antea*, vol. xlv, pp. 121-122). There are now ten records of the appearance of this bird at Fair Isle, mostly on dates in the second half of September and first half of October. KENNETH WILLIAMSON

Pine Grosbeak on the Isle of May.—At the Isle of May, Scotland, on the morning of 8th November 1954, a variable southerly wind was succeeded by a south-west gale which blew up with sudden intensity. Few migrants had been about before, but by mid-day a marked movement was taking place, with birds fighting their way in to the island from due north.

On the way to the North Ness we put up a number of Blackbirds (*Turdus merula*) and then, above Altarstones, we noted a smaller greyish bird with a bright, rusty-iron-coloured head hopping unconcernedly round a rock and then probing successive tufts of sea-pink, crouching low to the ground as it did so. At first sight it looked like an elongated and massive Crossbill (*Loxia curvirostra*). The slightly raised crown feathers gave an impression of mottling and made the head seem very large, and the heavy hooked beak not disproportionate. The longish tail and the primaries were very dark; the median covert tips formed a well-defined, pale wing-bar, and those of the greater coverts a bar less clearly marked. We identified the bird as an adult female Pine Grosbeak (*Pinicola enucleator*).

It was not seen again that day, but it is perhaps of interest to describe briefly our observations on the arrival of other birds on the island which show the conditions which brought the Pine Grosbeak. Blackbirds were lurking in every shelter, and when we reached the north-west tip of the island where huge waves were driving past to the north-east, scattered black dots just visible through the spray were struggling to reach the rocks, making a

zig-zag approach. Each bird flew low along the trough of a wave, rose just high enough to clear the crest, was hidden in foam, reappeared beating down the next trough, gained enough height to check its direction, often failing to make headway against the gale, then with a final effort passed the surf on the rocks and dived headlong into the nearest crevice. In fifteen minutes we counted 53 Blackbirds, 11 Fieldfares (*T. pilaris*), 3 Redwings (*T. musicus*), 2 Kestrels (*Falco tinnunculus*), a Snipe (*Capella gallinago*) and a Woodcock (*Scolopax rusticola*) make the land, and that was only over a small stretch of rocks.

On 9th November we searched for the Pine Grosbeak from the west landing to the lighthouse, but only rounded up about 40 Blackbirds. We drove the top trap from which Blackbirds rattled off in all directions, and then while we were securing at the back of the closed trap those that we had caught, we noticed a bird hopping calmly about the veronicas in the entrance, and caught a glimpse of rust and grey. We moved quietly round, and the bird hopped and fluttered into the trap in a leisurely manner. As it was caught it demonstrated the strength of its beak, but afterwards was as gentle in the hand as it was unconcerned and rather sluggish in the field. Twice it gave a rather harsh call. It was ringed, measured, and a full description taken, after which it was photographed in the hand (plate 19). We then put the bird down upon the ground, and managed to take the other photograph (plate 20) of the bird squatting on a slight hummock. It is of interest to point out that it was crouching flat like this in between intervals of feeding when we first saw it on the 8th.

W. U. FLOWER, TOM WEIR and DOUGLAS SCOTT

[It is of interest to note that there was an irruption of Pine Grosbeaks into Scandinavia at this time. Dr. Holger Holgersen writes that on the south-west coast of Norway this species is considered a very rare vagrant, and in 76 years since the Stavanger Museum was erected, only 8 Pine Grosbeaks have been brought there. In late October 1954, however, a trapper in Sokndal sent to the Museum 6 Pine Grosbeaks that had got into his snares eating the *Sorbus* berries. In the following days more were caught, so that between 26th October and 3rd November a total of 30 were trapped. Others were seen in the same area, but the birds seemed to move away after the first few days of November. Pine Grosbeaks were also reported in unusual, though not large, numbers from other districts in the same part of Norway.

Dr. Gunnar Svärdson informs us that the irruption of this species also affected Sweden during November and December 1954. No summary is available yet, but it is understood that the birds were observed in many localities from central Sweden south to Scania. For Denmark Herr C. A. Blume has given us details of a total of 7 Pine Grosbeaks at Skovshoved and Tisvilde Hegn on 23rd November and of a single bird at Amager on 19th December.

---EDS.]

Parrot Crossbill in Northumberland.—On 16th September 1954 an immature cock crossbill was brought to the Hancock Museum, Newcastle upon Tyne. It had been picked up dead near Cateleugh, Redesdale, Northumberland, on the main Newcastle to Jedburgh road, having just been knocked down by a passing vehicle. It was one of a party of four—the others being a second red bird and two green. After the accident, these three remained near the road-side, flying round calling to one another, and were under observation for some twenty minutes. Unfortunately the observer did not take any special note of their size. Upon examination at the Museum, however, it was at once seen that the dead bird was unusually large and that it had an exceptionally stout bill. The depth of the bill at the base was 13 mm. and the length of the upper mandible 22 mm., while the over-lap of the upper mandible was very prolonged. It was therefore sent to the Editors of *British Birds*. Col. R. Meinertzhagen and I. J. Ferguson-Lees compared it with skins in different collections and all who have seen it are satisfied that it is a Parrot Crossbill (*Loxia (c.) pytyopsittacus*).

Dr. H. M. S. Blair informs me that, within the last decade, Parrot Crossbills have been found breeding close to the southern and western sea-boards of Norway, near the towns of Kristiansand and Bergen; so their appearance as immigrants to this country is not unlikely. No immigrant Common Crossbills were recorded here in 1954; but as the Parrot and Common Crossbills do not necessarily breed in the same district in the same year in Norway, an immigration of the former would not necessarily be associated with an "invasion" of the latter. GEORGE W. TEMPERLEY

Red-breasted Mergansers breeding in Anglesey.—On 12th June 1953 I found the nest and eggs of a Red-breasted Merganser (*Mergus serrator*) by a bay in Anglesey. Three weeks previously I had seen a merganser duck feeding in the vicinity, and when I got to the beach on 12th June, there were four of these birds fishing in the next bay. After a while, two drakes and a duck flew round to where I was. Eventually the duck and one of the drakes came close inshore and the duck landed, preened herself, and then flew up on to a rather high bank opposite. I climbed up and when she flew out, discovered the nest-site by the well-worn "run" that led to it. It was under some brambles. I felt the down and eggs, and managed to see the nest through the brambles, after which I left so that the duck could return, which she did within about ten minutes. At the beginning of July I was able to return to the area, and found that the merganser had had a very successful hatch of 12 or 13 as far as I was able to count the young as they swam with the duck on a somewhat choppy sea. There were two infertile eggs in the nest, and these are now in my

possession. At no time was I able to get any evidence that more than the one pair was breeding.

In 1954 a pair of Red-breasted Mergansers again nested in the same area, the site being within 30 yards of the 1953 one. The duck was incubating on the 3rd-5th June, the period of my visit. Unfortunately there must have been a tragedy, as when I was up there a month later, I saw no sign of any ducklings. There is good evidence that a second pair nested in 1954, and I later heard that 16 ducklings were seen by Mr. M. Jones. R. L. VERNON

On 6th June 1953 I saw a pair of Red-breasted Mergansers and two adult drakes on the sea off the bay in Anglesey where I later learnt that Mr. Vernon found the nest. On 30th June I saw the female on a channel in the bay with 14 small ducklings, which I estimated at 4 or 5 days old. ALAN BALDRIDGE

[In Ireland the breeding range of the Red-breasted Merganser has extended, and its numbers have increased since the beginning of the present century (R. F. Ruttledge in *Birds of Ireland*, 1954, p. 68). In England the species has in recent years spread into Cumberland from the Scottish borders, an extension of the southward trend that had been apparent in Dumfriesshire for some years previously. In this connection Mr. Ernest Blezard writes as follows:—“The Red-breasted Merganser had got fairly far south in Dumfriesshire by 1928, when I found the first nest recorded for that county by the Water of Milk within a jump of its junction with the River Annan. A pair had been settled on that stretch of the Annan since about 1924. In Cumberland Mergansers have been about the Border Esk in the breeding-season since 1933. The first really conclusive evidence of nesting came from this area in 1950, when a duck with 6 ducklings, perhaps four days old, were seen there on 6th July by D. F. Owen, who estimated that there were ten pairs in the neighbourhood on 28th May. Since then, William French found a nest with 10 eggs on the Cumberland stretch of the Border Esk in June 1953.”]

Nesting was suspected in Westmorland in 1934, in which year there was also a brood of young ducklings seen on the Eden in Cumberland, but it was never proved that these were mergansers.—EDS.]

Red-breasted Geese in Gloucestershire—On 8th January 1954 Miss E. D. Overend discovered a Red-breasted Goose (*Branta ruficollis*) amongst a flock of about 1900 White-fronted Geese (*Anser albifrons*) feeding near the River Severn at Slimbridge, Gloucestershire. It was seen subsequently by many observers on at least six days to 25th January, and again on seven days between 13th February and 5th March. The age of the bird proved difficult to tell at a distance, but in the latter part of its stay some close views were obtained. The tips of the greater and medium coverts were dusky, rather than pure white, and some others of

the feathers on the back were juvenile, so that the bird was in its first winter.

On 23rd December 1954 Mr. J. F. Saunders shot a goose flying alone over an area of flooded meadows at Hasfield, near Gloucester, which were being used by small numbers of White-fronted Geese at that time. Through the kindness of Lieut.-Commander A. F. Collett the bird was sent to us and proved to be another Red-breasted Goose. It retained several juvenile retrices as well as other juvenile feathers on the back and coverts.

The only tame full-winged Red-breasted Goose kept in Gloucestershire, in the collection of the Wildfowl Trust at Slimbridge, remained there throughout 1954. There seems no reason to suppose either of the geese recorded above to be anything but wild stragglers. Although the species has been widely kept in captivity, it has been recently bred in only five collections in this country, so far as can be ascertained, and from none of these are young birds missing. Nevertheless the possibility of these two being escapes cannot be entirely excluded. Eleven previous occurrences of this species in Britain have been authenticated.

PETER SCOTT and HUGH BOYD

[Prof. R. Spärek informs us that in 1954 this species was also twice recorded in Denmark—at Tipperne in the Ringkøbing fjord on 30th April and 22nd-23rd October.—EDS.]

Calling up a Corncrake.—Some friends and I were motoring near Ballinluig, Perthshire, on 22nd May 1954, when we heard a Corncrake (*Crex crex*) calling from a patch of nettles where a small stream flowed under the road. Despite the fact that it was only 5 a.m. we were sufficiently enthusiastic to pull up a little way past the area and retrace our steps. As might be expected, the bird stopped calling as we drew near and our efforts to flush it were in vain; it did not start to call again until we had almost returned to the car. On hurrying back to the territory with great caution, we were grateful to see the bird as it stood—head well up—calling in the low weed growth. One of us produced a comb in an endeavour to attract the bird in the way suggested in many books—the effect was nil. Time seemed ripe for one of my bird imitations and so I contrived to produce a series of notes that sounded, more or less, like a Corncrake. The effect was—to say the least—electrical: the bird ceased calling and hastily made towards me, only stopping when it reached the wall alongside the bridge. I moved to the end of this wall and lay down behind the roadside herbage calling all the while. The bird quickly arrived at a position about one foot from my head.

After this it seemed possible to catch the bird so I crossed the road, stood beside the stream and started to “erake”. The Corncrake ran under the bridge and approached me—there was no cover of any sort and it had every opportunity of seeing that my

friends and I were not Cornerakes. The bird was not deterred, however, and came to my feet. When I stopped calling it ran off a little distance, but after I had squatted and was holding my hand in readiness to catch the bird, it returned the instant I started calling. On seeing my hand it grasped my little finger in its bill in a most aggressive manner—I felt rather harshly treated and hoped that this was not customary Cornerake courting. This development enabled me to grasp the bird and within ten minutes we had absorbed the plumage details, ringed it and returned it to the nettle patch.

The event seems to indicate (or confirm) that the prime means of locating a mate or a rival is by sound, for even my “uncornerake-like” bulk did not lessen the bird’s interest in me and my onlooking friends were completely disregarded. We subsequently motored to Skye and heard other Cornerakes calling—I tried the mimicry again twice but without any success. J. W. DONOVAN

Dowitcher in Norfolk.—On 14th October 1954, at about 1130 hours, I saw a Dowitcher (*Limnodromus griseus*) on Scolt Head Island, Norfolk. It was first noted at about 30 yards range, feeding with Dunlin (*Calidris alpina*) on a bank of sand and mud. The Dunlin, followed by the Dowitcher, rose and the latter flew directly towards me. It settled again about 6 feet away, remained for some 3 minutes watching me, and then flew about 20 feet away on to another sandbank among some *Suaeda* bushes. In a few minutes it flew off and was lost to sight.

I noted the following points:—About the size of a Redshank (*Tringa totanus*) but heavier and with shorter legs. Mantle and upper-parts grey-green with darker wings, but white tips to secondaries. White up back with fine dark bars across to tail. Breast warmer and a line apparently defined this across about half-way. Head very snipe-like with eyes high up and long, dark, snout-like bill, flattish towards the tip and notably tapering. Dark, rather short legs. R. ERIC POCHIN

Marsh Sandpiper in Lincolnshire.—On 8th August 1954, together with J. Cunningham, D. Farren and Miss W. M. Irving, I observed a Marsh Sandpiper (*Tringa stagnatilis*) in the Welland estuary near Holbeach St. Marks, Lincolnshire. The bird was resting at high tide on mud, in loose association with Redshanks (*T. totanus*), Greenshanks (*T. nebularia*), Black-tailed Godwits (*Limosa limosa*) and other species, and it was under observation for about forty minutes before it flew off up the estuary. It was rather shy and we were unable to watch it at ranges less than about sixty yards, but in excellent light we were able to compare it critically with Greenshanks in the same area. A full description was obtained, of which the more important features are as follows:—

General appearance somewhat Greenshank-like, but distinctly slighter, with very slender neck and head; legs rather longer, the bird appearing to stand appreciably higher off the ground; bill very long and very slender, appearing quite straight. Forehead, much of face, front of neck and whole under-parts dazzlingly white, unmarked except perhaps at the sides of the breast; crown, nape and hind-neck rather dark grey, extending forward a little round the neck just below the base of the head. Upper-parts rather dark, conspicuously mottled and streaked buff on a blackish ground, giving a general dark brownish-grey appearance in poor light, but appearing almost black when the bird faced the sun. In some lights the bird appeared conspicuously black and white. When stretching, however, the paler mantle and secondaries contrasted with the dark primaries, and in flight the wings appeared much paler (uniform greyish—D.F.). Flight pattern much as Greenshank's, but more slender and rakish, with the slender legs extending well beyond the tail, much as in a Spotted Redshank (*T. erythropus*). When on the ground, size approximated to that of Redshank (D.F.) or rather smaller (J.C., I.C.T.N.), but legs longer and body slimmer and shorter. The bird was silent on rising and no call-note was heard.

This constitutes the first record of the species in Lincolnshire.

I. C. T. NISBET

Jackdaw roost continuing throughout breeding season.—In the life history of the Jackdaw (*Corvus monedula*) in E. M. Nicholson's *Birds and Men* (1951, pp. 173-179) it is stated that “. Jackdaws, like rooks, are fond of congregating to roost after the breeding season in trees.” I have frequently noted a roosting flight of Jackdaws in the Merthyr Valley, Glamorgan, and although I have never made a special study of the matter, I see from my past notes that the roosting habit is apparently not confined to “after the breeding-season”.

In 1953 I kept records from the beginning of January until the end of June, and from these I note that the local Jackdaws made use of the roost during every month of this period. Taking the breeding-season to occur from April onwards, I have records of flocks of a minimum of 2,000 Jackdaws flying to the roost on 6th April, 24th May, and 3rd June, apart from numerous instances when I estimated between 1,000 and 1,500. As a comparison, estimates made on 18th and 25th January and 22nd February give the average winter population using the roost as 2,000. For later months in the year, i.e. from July to December, I have few observations, but records of flocks of Jackdaws running into thousands were made on 7th September 1951, 25th October 1952, and 7th December 1952. Thus it appears that Jackdaws sometimes roost gregariously throughout the year, including the breeding-season.

JOHN GRIFFITHS

BOOK REVIEWS

BOWER-BIRDS: THEIR DISPLAYS AND BREEDING CYCLES. By A. J. MARSHALL. (*Oxford University Press*, London, 1954). pp. vi+208; plates 26; text-figs. 30s.

DR. MARSHALL has used the sub-title "A preliminary statement" for this book because although it is "the result of more than twenty years' intermittent work with bower-birds and summarizes the meagre available knowledge about all known species, it is, in fact, no more than a basis for future research." It is none the less an important statement.

Two chapters are devoted to consideration of the internal and external factors which influence the avian breeding cycle. And indeed one of the most important features of this book is the fact that the study of bower-bird behaviour has run parallel with a study of the mechanism which controls or modifies it. It is shown that in the bower-bird group where display behaviour is so highly specialized, there are external factors such as a food supply dependent upon climate, which have made necessary a modified timing of the reproductive physiology of the two sexes, the specialized display behaviour being partly a manifestation of this. Yet the basic physiological principles do not differ from those of all other species so far examined.

Eighteen of the twenty-three chapters are devoted to the bower-birds and eat-birds, one chapter for each species. A brief description of the species is given, its distribution described with maps, and an account given of its discovery. Knowledge of the bowers and specialized display-habits varies greatly, from the Satin Bower-bird (*Ptilonorhynchus violaceus*) which has built its bower in captivity in London to species such as the New Guinea Regent-bird (*Sericulus* (*Xanthomelus*) *bakeri*) where the display ground has yet to be discovered. Material for laboratory work has been non-existent in several species, sufficient for comparative work in others, and in the Satin-bird enough for the gonad cycle to be worked out, and for useful comparisons with other Passerine and non-Passerine species to be made. The account of the provision of marked pieces of blue glass for use as display objects by Satin-birds, as a means of following the movements of individual males, will appeal to experimentally minded behaviour-students.

It is worth comment perhaps that the non-colonial breeding bower-birds flock during the post-nuptial refractory phase, while the colonial breeding Rook (*Corvus frugilegus*) appears to be less gregarious at this time, reforming flocks and roosts as the refractory phase ends.

The evolution of bower building is discussed, and it is suggested that its origin may have been as a displacement activity. Some experimental evidence is given (in a note in the addenda) to modify the author's earlier view, that the colours of the display objects

instead of having a relationship to the colours of the female, are dictated by the colours of the rival male. Differences in behaviour may largely depend on physical differences in cell structure chemistry and function, which have evolved along different lines in different groups of animals, just as surely as the grosser structural characteristics which have been largely used in classification in the past. Dr. Marshall suggests a classification based on bower-building characteristics.

The book is illustrated with photographs including some photomicrographs grouped at the end, and with line drawings, diagrams and maps in the text. There is a bibliography of 290 references, a list of scientific names of animals mentioned in the text, and an index.

C.J.F.C.

FLYTTNING OCH UTBREDNING (MIGRATION AND DISTRIBUTION). By GUNNAR OTTERLIND. (Reprinted from *Var Fågelvärld*, Göteborg, 1954) pp. 100. 6 text-figs. Swedish text with English summary.

THE author of this important contribution to *Var Fågelvärld* is chiefly concerned with the effect of climatic variations upon the distribution of migratory birds, with particular reference to the Swedish avifauna. Within recent decades, the list of species recorded as breeding in that country has been increased by twenty-five, of which fifteen are now firmly established. In addition, five species which earlier ceased to breed in Sweden have returned. These notable accessions the author relates to modifications in the climate of central and western Europe. Temperatures registered in the spring-months, and especially in April, within the period under review, have exceeded those recorded in the 19th century. Such conditions favour the extension of migratory movements, and it is in the warmer springs that most of the newcomers to Sweden have gained a footing. Considerable space is devoted by Dr. Otterlind to the subject of "prolonged" migration, which he rightly considers of the greatest importance. Discussing the origin of the influx of new species, he notes that some of the immigrants have reached Sweden from the south-west, via Denmark, others from the east or south-east. The latter have been the less successful as colonists, the Baltic apparently being a formidable obstacle to dispersal. In Sweden, as in Finland, the tendency has been for islands to be colonized rather than the mainland. Thus the islands around Gotland yielded the first breeding-records for the Scarlet Grosbeak, Red-breasted Flycatcher, Greenish Warbler and Pallid Harrier. Most of the recent colonists have been marsh-birds—species which will naturally concentrate within restricted areas, and be more likely, therefore, to succeed in pairing than woodland forms. The author further suggests that birds given to singing on passage have greater chances of finding mates than others, quoting in illustration the

Swedish history of the Thrush Nightingale. As might be expected, Swedish observers have found an excess of males amongst the individuals of a species colonizing fresh territory. For example, when the Greenish Warbler made its first settlement, males were in a majority of five to one. Swedish records also confirm that with most species young birds predominate amongst the pioneers. Of the first ten Scarlet Grosbeaks seen in Sweden in spring, six were in immature plumage, and these included the only two which were known to breed.

Although the Swedish climate has become milder, cold and backward springs still occur. A varying number of birds may then be found breeding beyond the normal limits of their species. Dr. Otterlind deals very fully with such "abbreviated" migrations, and refers to some interesting recent occurrences, amongst them the breeding of the Brambling in some numbers, in 1931, many miles short of its usual Swedish range. Limited migratory movements, it is also pointed out, may be undertaken by birds weakened by the hardships of a severe winter, and in exceptional cases—the Long-tailed Duck is especially mentioned—cripples have been known to breed in their winter-quarters.

This valuable paper is most ably compiled, and we can recommend it to all interested in the subjects with which it deals. It is supplemented by an English summary, and the text-figures bear English as well as Swedish captions. H.M.S.B.

LETTERS

VISIBLE MIGRATION IN 1952

SIRS,—In a recent paper by Dr. David Lack (*antea*, vol. xlvii, pp. 1-15), a comparison is made between immigration of birds in Kent compiled from observations at about eight or nine different sites, with that in Suffolk from one site only. This has the result of making certain statements in this paper misleading, as Suffolk records are confined to Minsmere, whereas, in fact, other records (given below) show that immigration at other points on the Suffolk coast, particularly between Walberswick and Hopton, produce a somewhat different picture.

STARLING (*Sturnus vulgaris*).—On 4th October a steady influx observed at Corton and Hopton in flocks varying from a few birds to one of 300; on the 12th a steady influx during the afternoon at Corton; a few flocks at Corton and Lowestoft on the 31st. On 1st November numbers observed arriving at Walberswick and a steady arrival at Corton and Hopton during the afternoon; also numbers on the 2nd, and, at Walberswick, several flocks on the 3rd, as well as at Corton. On the 9th again, a considerable

number observed arriving throughout the morning between Corton and Easton.

CHAFFINCH (*Fringilla cœlebs*).—A few seen arriving at Corton and Hopton on 4th October, a steady influx on the 12th; small parties observed on 2nd November, and one flock arrived at Lowestoft on the 13th.

ROOK (*Corvus frugilegus*).—On 16th and 17th October small flocks—with Jackdaws (*C. monedula*)—at Lowestoft; at Corton and Lowestoft also on the 31st; and on 2nd November, large flocks of Rooks and Jackdaws seen arriving in Corton and Hopton area; one flock seen on the 9th there.

SKYLARK (*Alauda arvensis*).—In Corton and Hopton area, a few noted arriving on 4th October, and numbers heard after dark on the 11th, a steady influx during the afternoon on the 12th, and an odd one at Lowestoft. A few on the 31st recorded. On 1st November, a considerable number between 1415 and 1600 hours at Walberswick, and smaller numbers seen arriving in Corton and Hopton area; again on 2nd, and on 3rd, several flocks at Walberswick; on the 9th several flocks noted arriving between Corton and Easton, and an odd flock at Lowestoft on the 12th.

KESTREL (*Falco tinnunculus*).—One arrived at Hopton on 8th November.

WOODPIGEON (*Columba palumbus*).—At Corton on 16th November one arrived at 1605 hours; and on 15th December, at 1030 hours, between 30 and 40 arrived in from the sea at Lowestoft.

THRUSHES (*Turdidæ*).—On 5th October several small flocks of Redwings (*Turdus musicus*) observed arriving at Oulton Broad; at Corton on the 11th five small flocks heard arriving after dark, a steady influx during the afternoon there on the 12th. During a S.E. gale on the 13th, small parties of Blackbirds (*T. merula*), Song Thrushes (*T. philomelos*), and Redwings seen arriving over Lowestoft and Corton during late afternoon and evening. Many of these perished, and large numbers were washed up on the beaches. On the 18th, with a strong E.S.E. wind, a steady influx of Mistle Thrushes, Song Thrushes, Redwings, and Blackbirds noted between Corton and Walberswick up till midday. A few flocks of Redwings and Fieldfares seen arriving at Corton and Lowestoft on the 31st. On 1st November, 3 flocks of Mistle Thrushes arrived at Walberswick between 1415 and 1600 hours, and a steady arrival of Fieldfares, Mistle Thrushes and Redwings at Corton and Hopton during the afternoon. On the 3rd, small flocks of Fieldfares and Blackbirds came in at Corton. On the 9th several flocks of Fieldfares and Redwings were seen arriving between Corton and Easton.

LAPWING (*Vanellus vanellus*).—A few seen arriving at Corton and Hopton on 4th October, and at Walberswick between 1415 and 1600 hours on 1st November, and on the 3rd, there, between 1455 and 1555 (period of observation), three flocks arrived

(totalling over 80 birds). (Earlier on 30th September, 54 seen arriving at Covehithe between 0730 and 0815 hours—period of observation).

Perhaps the most unusual occurrence was the observed arrival of two Redshank (*Tringa totanus*), one Short-eared Owl (*Asio flammeus*), and a party of nine Long-tailed Tits (*Aegithalos caudatus*), during a period of observation between 1415 and 1600 on 1st November at Walberswick.

These observations (often, admittedly, without specifying numbers in a flock) are taken from published records in the Lowestoft Field Club Report, and from other observers. They refer, obviously, to records made on odd occasions at certain regular places. It is fair to assume, therefore, that, had a regular watch been held during the period 14th October to 5th November, at other sites on the Suffolk coast, particularly to the north of Minsmere, a different picture of immigration would have resulted from that recorded at Minsmere. While Dr. Lack's paper is most informative about immigration along the Kent coast, it is suggested that, on the evidence quoted in his paper, there can be no satisfactory comparison with Suffolk coastal immigration. The picture at Minsmere (the site chosen), moreover, appears to differ from that further north in Suffolk, not only from the random records I have quoted, but from the mass of evidence already published and admirably discussed by Dr. C. B. Ticehurst in *The Birds of Suffolk* (1932).

P. R. WESTALL

HEAVY IMMIGRATION OF BLACKBIRDS AND OTHER THRUSHES

SIRS,—On 6th November 1954 and during the night of the 5th/6th a very large immigration of Blackbirds (*Turdus merula*), Redwings (*T. musicus*) and other species was noted at Spurn Point in Yorkshire, Gibraltar Point in Lincolnshire and Walberswick in Suffolk. A similar immigration occurred at Monks' House, Northumberland, on 5th November. I should be most grateful if observers who noted this immigration elsewhere would send me full particulars to Bleasby Grange, Legsby, Market Rasen, Lincolnshire.

R. K. CORNWALLIS

[In *The Naturalist* for January-March 1955 (No. 852, pp. 3-4) G. H. Ainsworth, A. E. Platt and R. Chislett have described the rush of birds at Spurn Bird Observatory during this period. On 6th November no less than 320 birds were ringed there, and of these 282 were Blackbirds. "All along the road down the peninsula Blackbirds were numerous. The figure of 2,000 at which they were estimated may have been an underestimate."

It is also worth drawing attention to the happenings on the Isle of May a day or two later (see pp. 133-134).—Eds.]



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BRITISH BIRDS



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BRITISH BIRDS

AN ILLUSTRATED MONTHLY MAGAZINE

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W. B. ALEXANDER

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Cover photograph by G. K. Yeates: Lapwing (*Vanellus vanellus*)



BRITISH BIRDS

YELLOWTHROAT ON LUNDY: A NEW BRITISH BIRD

By BARBARA WHITAKER

ON 4th November 1954 a first winter male Yellowthroat (*Geothlypis trichas*) was trapped on Lundy Island, Devon, detained overnight, and released the following morning after being ringed. It had not been seen before it was caught, but may well have been present on the island for a few days, as it did not appear to be exhausted and, in fact, seemed in good condition.

When first glimpsed flying into the trap, it was thought to be a Chiffchaff (*Phylloscopus collybita*). A more adequate view showed that it was a bird quite unfamiliar to us, the most striking feature being a brilliant canary-yellow chin, contrasting sharply in the malar region with the ear-coverts and lores, which were black, mottled with grey.

It was taken to the laboratory, where measurements and a full description were obtained, as follows:—

Plumage. Crown, olive-green to olive-brown. Nape, hind neck, mantle, back, rump and upper tail-coverts, all greenish-grey to olive-green. Primaries and secondaries: inner webs, greyish-black; outer webs, olive-green. Wing coverts, olive-green. Tail, olive-green-grey, with greenish-yellow tint on outer webs. No eye-stripe. Feathers of ear-coverts, lores, and immediately below the eyes were black, tipped with grey, giving a mottled effect. Chin, canary-yellow. Throat, canary-yellow, grading into a paler cinnamon-yellow at the sides of the neck. Across the throat was a faint cinnamon-tinted band. Breast, pale yellow, grading into fawn-yellow beneath wings. Flanks, pale fawn. Belly, pale cream-yellow. Under tail-coverts, yellow tinted with cinnamon.

Soft parts. Bill, horn-coloured, with cutting edge of both mandibles and the centre ventral surface of the lower mandible pinkish. Legs, pale pinkish-brown. Iris, dark brown.

Measurements and structure. Total length about 120 mm.; wing 57 mm.; tail 51 mm.; tarsus 23 mm.; bill 11 mm.

Wing formula. 1st primary 2.5 mm. shorter than the longest; 2nd, 3rd and 4th equal and longest; 5th 2.5 mm. shorter; 6th to 9th, each decreasing by 1.5-2.0 mm. 2nd, 3rd and 4th emarginated.

Tail. 10 feathers approximately equal in length, each sharply pointed and abraded.

Weight. (at 1300 hours on 4th November) 11.7 gms.

It was in general appearance like a small round-winged

Phylloscopus, though some of its movements when released in cover were reminiscent of a Wren (*Troglodytes troglodytes*), as it moved just above the ground in thick bramble and grass cover. When released on the window-sill of the laboratory it frequently flitted its wings, most movements being accompanied by a monosyllabic "chat"; at the same time it half raised the feathers of crown and forehead. When released in the cage of the Heligoland trap, it soon disappeared from view in the cover available, but continued to "chat" while I was near the cage.

The bird was shown to F. W. Gade, and an attempt was made by Fred Jones, of the South Light, to photograph it. We were at the time quite unable to name it, and a full description, together with specimen feathers from various parts of the body, was sent to W. B. Alexander, who identified it. The specimen feathers were quite sufficient to confirm the identification, when compared with skins in the British Museum (Natural History). 12 races of Yellowthroat were recognised by the 1931 American Ornithologists' Union *Check-List*, but neither the specimen feathers nor my recollection of the bird are sufficient to attempt a subspecific determination.

[The end of October and the beginning of November would not, as might at first be thought, be phenomenally late for a migratory bird like a Yellowthroat to be in the United States at a latitude sufficiently far north for it to be possible for it to be drifted across the Atlantic to the British Isles. In A. C. Bent's *Life Histories of North American Wood Warblers* are given a number of October to December "late dates" for autumn departure, and particularly under New York it is stated that there are "numerous November and December records near the coast". Mr Kenneth Williamson has made an analysis of the weather conditions and this shows that these were ideal for a crossing between 31st October and 4th November, but here it should be added that the bird's condition and more particularly its weight of 11.7 gms. suggest that it had probably been on Lundy, or at least in the British Isles, for some time before it was trapped. Mrs Margaret Nice has kindly drawn our attention to the following weights of Yellowthroat in America, given by Mrs. Olive P. Wetherbee (1934, *Bird-Banding*, vol. 5, pp. 55-64):

Male, 11th July. 9.72 gms.

Female, 29th July, 10 gms.

20 Immatures, 21st July-7th September, 8.9-12.6 gms. (average 10.44 gms.)

Even allowing for the fact that the normal weight for a warbler of this kind in late October may be higher than at any of the times when the above weights were obtained, these figures suggest that the Lundy bird was at worst not much below its normal weight.

The occurrence of this bird, and also of a Myrtle Warbler (*Dendroica coronata*) near Exeter, Devon, between 5th January and

10th February 1955 (details will appear in our next issue), have forced us, in conjunction with the B.O.U. Records sub-Committee, to consider the whole question of the occurrence of American Passerines in Britain. Neither of these species is at all likely to have escaped from captivity (we are grateful to Miss Phyllis Barelay-Smith, Mr. Derek Goodwin, and Mr. A. A. Prestwich for confirmation of this point), and so the only reason that could possibly be put forward for either of these birds not to be regarded as genuine candidates for the British list, is the possibility of the so-called "assisted passage" by boat. Whether or not small insectivorous birds are capable of surviving a trans-Atlantic passage on a boat (necessarily a much slower crossing than if they were swept over by high wind), does not concern us here, for in consultation with the B.O.U. Records sub-Committee we have come to the conclusion that the possibility of "assisted passage" should not necessarily deny to a bird the right of admittance to the British List. Consideration of the following points led to this conclusion, which obviously applies more particularly to American Passerines.

(a) Small Passerines migrate regularly between Greenland and Europe. Recent work suggests that a direct crossing from the N. American mainland is not inherently impossible under exceptionally favourable conditions.

(b) Ships are an ever-present feature of the N. Atlantic and their influence on birds and bird distribution should not be regarded as more unnatural than any other man-made object or alteration to the land or sea-scapes, nor indeed do they in effect differ from flotsam, on which a bird might rest.

(c) There is no possibility whatever of knowing whether or not *any* bird that reaches Britain has settled on a ship nor, if it did so, the length of time it remained there. To deny American Passerines a place on the British list on the ground that they had not made or could not have made the journey unaided in this way is to imply that all of the American birds already included in the list have had an unaided passage. With this implication we are not prepared to agree. Whether or not the passage was unaided should be regarded as irrelevant in the light of (b) above.

(d) Consideration of meteorological reports may be of considerable value, but the weather prevailing immediately before a bird's discovery is not necessarily of great significance, for the bird may have been in this country for some time before it was seen.

(e) With the sub-Committee we are prepared to accept for admission to the British list as a genuine wild bird any that in our opinion has reached Britain *in a free state*. Each case must be carefully considered on its merits; the possibility of escape from captivity must be judged; the status of a bird, whether migratory or sedentary in its own country, must have weight in forming a decision.—Ends.]

THE PASSAGE OF BLACK TERNS THROUGH BRITAIN IN SPRING 1954

By R. F. DICKENS

When it became apparent in May 1954 that there had again been a large passage of Black Terns (*Chlidonias niger*) through Britain, R. F. Dickens and Alec Butterfield undertook to prepare a summary of the movement. As records later came in, showing an unusually heavy autumn movement also, the work was divided—R.F.D. dealing with the spring records and A.B. the autumn.

The present paper is based on information sent in as a result of appeals in *British Birds* (*antea*, vol. xlvii, pp. 248 and 284) and in *Bird Study* (vol. i, pp. 124 and 178). A large number of records has been collected and sent in by various county report Editors who, together with the British Trust for Ornithology, are thanked for their help. I am also indebted to the Controller of H.M. Stationery Office and to the Meteorological Office of the Air Ministry for permission to use information provided in the Daily Weather Reports. Mr. Kenneth Williamson, Director of the Fair Isle Bird Observatory, has kindly helped with the interpretation of this information and its bearing on the movements of Black Terns through the British Isles. I am also indebted to Dr. R. A. Hinde for his valuable advice.

The Handbook of British Birds (Vol. V, p. 4) states that Black Terns winter on the coasts, rivers and lakes of tropical Africa, south as far as Angola and Tanganyika. Migrating through N. Africa, S. Europe and S.W. Asia, the species returns in spring to breed locally in countries throughout Continental Europe apart from the extreme south, the mountainous region of the Alps, and some of the northern and western areas. Although they have ceased, since the middle of the nineteenth century, to breed in the British Isles except for a few isolated instances, Black Terns continue to appear regularly in spring, and generally in larger numbers in autumn, as passage migrants. In some years the spring movement involves considerable numbers. Some such instances are indicated in *The Handbook*.

In each of the years 1946, 1948, 1949 and 1950, a very heavy spring passage through Britain was noted, and summaries of these movements have appeared in *British Birds* (*antea*, vol. xl, pp. 24-26, 93, 378; xlii, pp. 113-117; xliii, pp. 177-179; and xlv, pp. 170-174).

In early May 1954 it was apparent that there was a larger concentration of Black Terns passing through Britain than in any of these previous years and this summary was embarked on with a view to discovering in what respects there was a similarity between all the movements and, if possible, what conditions give rise to such exceptional passage.

SPRING MIGRATION ROUTES

Dealing with the spring passage of Black Terns through the British Isles, *The Handbook* says that they arrive on the south coast from mid-April to early June. The main route is given as being up the Channel from the west, and up the east coast as far as the Wash, a few reaching the Yorkshire coast. The North Sea crossing to the east is said to be effected mainly south of the Wash. It is obviously less easy to obtain evidence of coastal and over-the-sea movement than of inland passage and, in fact, virtually no evidence has been forthcoming during the spring of 1954 for an up-Channel movement nor for an east coast route. Nor do the published accounts of the spring movements of Black Terns in 1946, 1948, 1949 and 1950 support the view suggested by *The Handbook* that it is coastal routes which are mainly used.

The Handbook account goes on to state that small numbers apparently also travel by inland routes. G  routet (1947) reported that passage through Switzerland is regular in the middle of May, sometimes in hundreds. He tells me (*in litt.*) that the route by which birds reach the Geneva area from the Mediterranean is certainly up the Rhone Valley (an equal, if not more abundant passage is also observed in Dombes), and it is likely that birds continue to Germany and the north-east.

In 1953 and 1954, Waller (1955) saw large numbers inland in Italy.

No  l Mayaud writes that during its spring migration through France, the Black Tern is seen in the interior in Aube, Somme and Seine Inf  rieure, as well as on the Mediterranean coast. On other sea-coasts it is seen in the south-west only, from the Pyrenees, probably to the Loire. It is never noted in Brittany (except Bri  re near the Loire estuary, where it nests) nor in Jersey, in spring.

It seems probable, from the accounts already published of former heavy movements, that the main spring migration of the species through Britain is also, as one would expect, an overland one, with birds tending to concentrate on the river valleys.

THE 1954 SPRING PASSAGE

Hinde (1949) and Goodbody (1951), summarizing the 1948 and 1950 passages respectively, divided records for Britain into two groups, Area A and Area B. The same system is used for 1954 for the easier comparison with earlier reports. Area A includes Devon, Somerset, Gloucestershire, Oxfordshire, Northamptonshire and the counties north and west of these, while Area B comprises the more southerly and eastern counties. For the sake of clarity, the two areas are shown on the map as if divided by a straight line.

In 1954 the first Black Terns seen in Britain were four parties,

with a total of 26 birds on Friday 23rd April, and small numbers continued to be seen for the next four days. All but two of these birds seen between 23rd and 27th April were in Area B. After the latter date, a Tuesday, no further birds were seen until two single birds on Saturday 1st May. Three Black Terns, together with 20-30 Common/Arctic Terns (*Sterna hirundo* or *macrura*), were circling the Dungeness Light, Kent, on the night of 1st/2nd May. The increase to 16 birds on Sunday 2nd May may indicate that more observers were operating at the weekend, but numbers of Black Terns reported, remained at a fairly constant level throughout the following week.

The increase to 11 reports with a total of 62 to 64 Black Terns for Saturday 8th May was undoubtedly again due, in part, to the larger number of observers operating at the weekend. The writers of previous summaries have encountered this same difficulty of not knowing what allowance to make for the greater intensity of

TABLE I—NUMBERS OF BLACK TERNS (*Chlidonias niger*) TO SHOW PEAK ON 9TH MAY, 1954.

(Only those areas with observations on three or more days are included)

LOCALITY	7th	8th	9th	May	10th	11th	12th.
AREA A							
Pennington Flash, Lancs ...	—	—	ca. 43	4	1	—	—
Marbury, Cheshire ...	—	0	21	0	0	—	—
Malham Tarn, Yorks. ...	*	*	21	0	0	0	0
Fairburn, Yorks. ...	—	—	34+	—	4	4	—
Eccup, Yorks. ...	—	0	a.m. 4 p.m. 8	35	—	—	—
Cannock, Staffs. ...	—	8	16	0	—	—	—
Alvecote, Warwicks. ...	—	—	a.m. 0 p.m. 10	3	1	—	—
Cottesmore, Rutland ...	0	0	13	6	2	0	0
Bittell Res., Worcs. ...	0	6	25+	5	—	—	—
Ecton S. F., Northants. ...	—	—	6	0	0	0	0
Area B.							
Tring, Herts. ...	—	0	24+	30	1	—	—
Hampermill Lake, Herts. ...	—	0	a.m. 3 p.m. 6	14	0	0	0
Cambridge, S. F. ...	—	—	7***	1	0	1	—
Weston Turville, Bucks. ...	—	—	19	a.m. 19 p.m. 8/9	0	—	—
King George V Res., Essex.	—	—	14	6	2	2	—
Dungeness, Kent ...	1	22	76	4	0	0	0
Cley, Norfolk. ...	4**	3	20	6	P	3	—
Taverham, Norfolk...	—	—	40-50	36	—	7	—
Rockland Broad, Norfolk ...	—	—	ca. 50	114	19	23	—

* "Unlikely to have been missed."

** 4 present, probably the same birds, from the 4th to the 7th.

*** With possibly five additional birds.

P Present, but no count made.

watching at weekends, but the phenomenal increase of birds reported for 9th May (96 records of approximately 1,979 birds) is obviously not due to this same factor alone. Figures available for several localities for a number of days preceding and/or following 9th May, show that it was without doubt the peak day for Britain as a whole (Table I).

The table includes only areas for which observations on three or more days are available. Cheddar, Somerset, also showed an increase, from 6 on 8th May, to 91 on 9th May. In several cases additional to those in Table I, the birds seen on 9th May were reported as "gone next day" or present only in decreased numbers. These are shown in Table II.

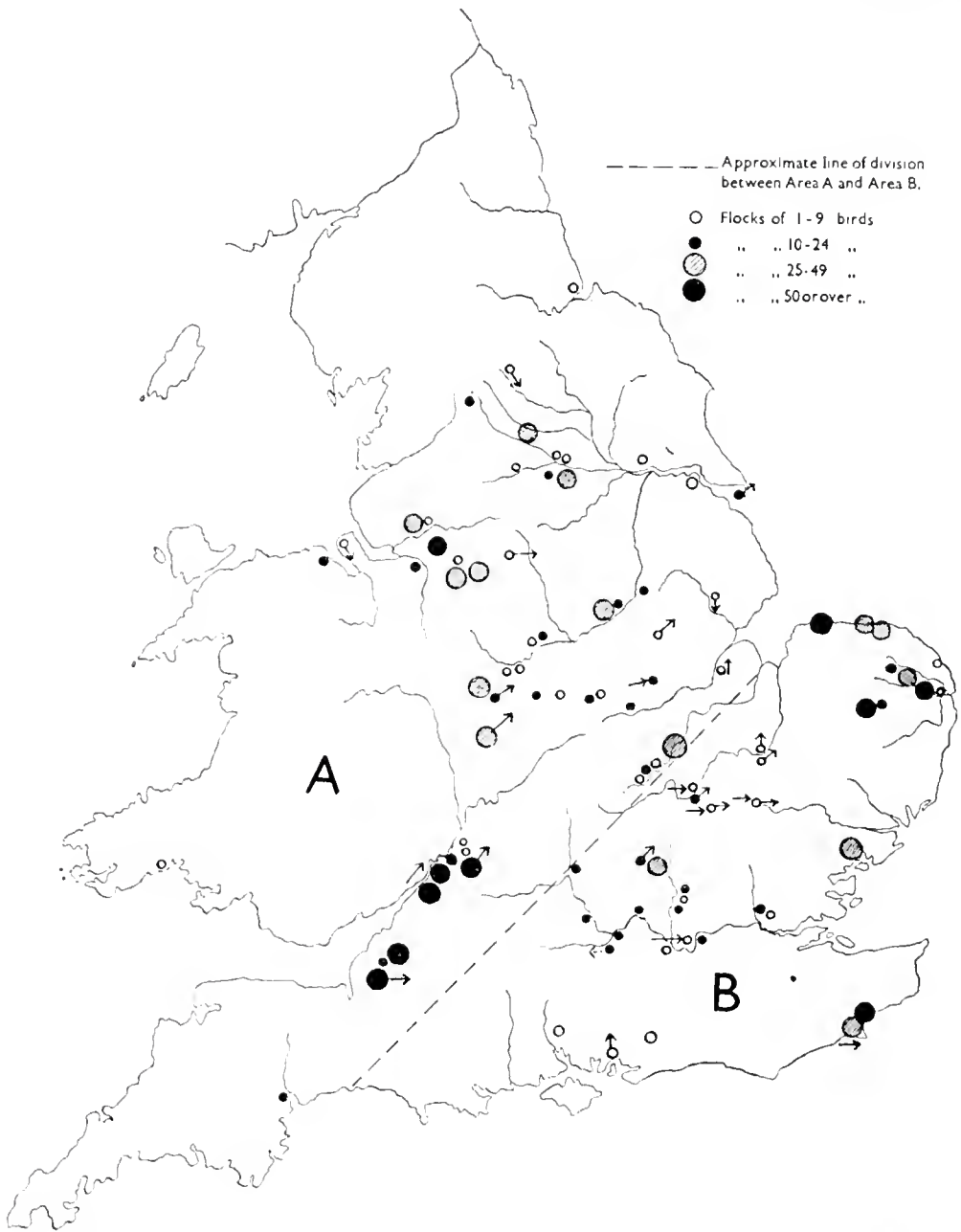
TABLE II—NUMBERS OF BLACK TERNS (*Chlidonias niger*) TO SHOW DECREASE AFTER 9TH MAY, 1954.

Area	Locality	9th May	10th May
A	Chelker Res., Yorks.	26	0
	Ringstone Edge Res., Yorks.	7	0
	Spurn, Yorks.	14	0
	Astley Flash, Lancs.	3	0
	Llynhelleg, Flints....	20	0
	Bellfields, Staffs.	30+	5
	Combs Res., Derbys.	3	0
B	Exe Estuary, Devon	17+	0
	Old Parkbury, Herts.	15	9
	Aldenham, Herts.	4	0
	Marlow, Bucks.	17	2

Further confirmation for 9th May being the peak day is provided in the detailed notes some observers sent of the gradual build up in numbers at one given locality during the course of that day. At Weston-Turville, Buckinghamshire, a similarly gradual reduction in numbers was noted during 10th May.

All records for the peak day, 9th May, are plotted on the map. Directions from which birds arrived at any one spot, directions in which they left, or were seen passing, are also shown.

In 1954, Black Terns passed through Britain quickly, numbers decreasing rapidly after 9th May. From 13th to 19th May not more than a dozen birds were reported from the whole country for any one day. From 19th May onwards, until the period 2nd-7th June, no Black Terns were seen at all, apart from one at Hickling, Norfolk, and 13 at Walberswick, Suffolk, on 23rd May when the weather maps show mist and easterly winds on this part of the east coast; and a single flock of *ca.* 20 near Salisbury, Wiltshire, on 27th May when there were light east to south-east winds over Holland and North France. During the period 2nd-7th June, 5 birds were seen singly in Area A, and there is one record of a



MAP TO SHOW DISTRIBUTION, NUMBERS AND DIRECTION OF FLIGHT OF BLACK TERNS (*Chlidonias niger*) IN THE BRITISH ISLES ON 9TH MAY 1954

party of 3. During the same period 3 single birds were seen in Area B.

There are late records of a single bird, seen twice, in Shetland between 18th and 21st June, and of a single bird at Altrincham sewage-farm, Cheshire, on 22nd June.

Table III shows the numbers of flocks* and individual birds reported during the spring of 1954.

* The term "flocks" is used to cover the number of separate observations, and a "flock" may therefore consist of one bird.

TABLE III—NUMBERS OF ALL BLACK TERNS (*Chlidonias niger*) RECORDED IN BRITAIN IN SPRING 1954

		April		23	24	25	26	27	
Area	No. of Flocks	...	...	—	—	1	—	—	Then
A	No. of Birds	...	...	—	—	2	—	—	none
Area	No. of Flocks	...	...	4	4	4	1	1	until
B	No. of Birds	...	...	26	5	5	1	4	May 1st

	May	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Area	Flocks	...	—	7	4	3	3	1	1	6	60	17	8	4	—	2	2	—	3	—
A	Birds	...	—	11	4	5	4	1	3	23	1286	97	22	—	7	—	2	2	5	—
Area	Flocks		2	3	2	2	1	4	3	5	36	22	6	6	3	3	4	4	2	1
B	Birds	..	2	5	5	7	4	9	7	40	693	359	27	37	11	6	8	8	6	3

	May	23	27	June 2	3	4	5	6	7	18–21	22
Area	Flocks	—	—	—	—	3	1	1	—	1	—
A	Birds	—	—	—	—	3	1	1	—	3	—
Area	Flocks	2	—	1	—	1	—	2	—	—	—
B	Birds	14	—	20	—	1	—	2	—	—	—

Although the 1954 passage was exceptionally heavy in many places, several observers in Area B commented that for their localities Black Terns were fewer than in some previous years.

The exeptional numbers of birds moving north-eastwards in the Severn estuary on 9th May are perhaps worthy of speeial mention. The observers in the area do not consider that the numbers are artificieally boosted as a result of the same birds being counted in two different localities. Places and times of observation make this unlikely. It is probable that numbers passing on 9th May were indeed even greater than indicated. R. H. Poulding, who reecorded 292 birds flying north-east between 1015 and 1315 hours at Sheperdine, Gloucestershire, reports that they were still passing when he left.

Several observers reecord that they heard birds giving the usual “kik-kik” or a similar eall, and T. Edmondson writes that he heard a ereaking note which was new to him. Three observers record birds moving off at dusk. Two eorrespondents said that they saw birds descend from a considerable height when arriving, and three others that birds rose to a considerable height as they left an area. Similar observations were recorded in previous

summaries and the impermanence of flocks was again commented on by several correspondents in 1954, as in earlier years.

In 20 cases, observers reported Common/Arctic Terns and, in 6 cases, Little Terns (*S. albifrons*) associating with the Black Terns. There is also a record from the Exe Estuary (see page 178) of a White-winged Black Tern (*Ch. leucopterus*).

TABLE IV—SUMMARY OF NUMBERS OF BLACK TERNS (*Chlidonias niger*) RECORDED DURING PREVIOUS HEAVY PASSAGES THROUGH BRITAIN 1946

	May	7	8	9	10	11	12	13	14	15
Area	No. of Flocks	—	2	5	7	9	5	3	1	—
A	Birds	—	2	22	52	78	18	29	1	—
Area	No. of Flocks	—	4	7	7	12	7	5	2	1
B	Birds	—	51	92	89	155	100	35	7	4

1948

	May	14	15	16	17	18	19	20	21	22	23	24
Area	Flocks	—	1	9	17	31	16	5	4	1	1	—
A	Birds	—	3	91	227	664	190	19	45	35	2	—
Area	Flocks	—	1	7	8	11	12	16	16	7	1	—
B	Birds	—	2	60	86	168	132	254	430	139	1	—

1949

	May	10	11	12	13	14	15	16	17	18	19	20	21	22
Area	Flocks ...	—	3	1	3	6	1	—	—	1	1	—	—	6
A	Birds ...	—	3	70	54	41	1	—	—	1	1	—	—	12
Area	Flocks ...	—	—	5	11	13	11	2	1	—	—	—	2	6
B	Birds ...	—	—	25	97	158	76	3	2	—	—	—	15	14

1950

	May	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Area	Flocks	1	3	1	5	30	25	6	13	4	5	1	1	1	1	1	1
A	Birds	1	6	2	13	273	115	29	59	19	19	1	10	1	1	3	1
Area	Flocks	1	3	5	7	14	28	15	13	14	10	2	6	6	2	1	—
B	Birds	1	13	17	58	107	406	191	218	161	109	2	11	28	3	2	—

LATER PEAKS IN SOUTH-EAST ENGLAND

It will be noted from Tables I—III that the decrease in numbers in Area A was more marked and rapid than in Area B. Eccup, Yorkshire, was the only locality in Area A at which there were increased numbers on 10th May. In Area B, higher numbers were recorded at Barn Elms, Surrey (12 on 9th May, 21 on the 10th), in addition to the three other localities shown in Table I. This follows the pattern noted in previous large movements of Black Terns through Britain. Hinde found that the peak of the 1948 passage was three days later in south-eastern England (Area B) than in the west and north (Area A). Goodbody noted that, in 1950, large numbers continued in Area B after they had dropped in Area A. The published figures for 1946 and 1949, though less conclusive, also indicated a later peak or a slower diminution in numbers in Area B than in Area A.

Figures for these previous years, amended to include records sent in after the original tables had been prepared, are given in Table IV.

DIRECTION OF FLIGHT

The fact that peaks in Area B are later than in Area A, or at least that numbers in Area B decrease less rapidly, would suggest that birds move from western and northern areas towards their Continental breeding grounds by way of south-eastern England, from where a shorter sea crossing to the Continent can be made. The general direction of flight of birds passing through Britain would help to establish whether this is, in fact, the case. For the vitally important dates, 8th-10th May in 1954, 31 records were sent in of direction of flight. Four observers recorded the direction from which birds were seen to arrive. 26 birds in three parties (Staines, Middlesex; Hauxton, Cambridgeshire; and Bedford) came from the west, and one party of 7 birds (Cottesmore, Rutland) was seen arriving from west-south-west.

Birds passing, or stopping only momentarily, were recorded as follows:—

Moving S.	—	1 party:	Tattershall, Lincs., 7 birds.
„ S.E.	—	2 parties:	Wirral, Cheshire, one bird; Nidderdale, Yorks., 6 birds.
„ E.	—	4 parties:	Bedford, 2; Arlesey, Beds., 8; Dengemarsh, Kent, 43; Chichester, Sussex, 3.
„ E.N.E.	—	2 parties:	Cannock, Staffs., 16; Bedford S. F., 18.
„ N.E.	—	5 parties:	Bittell, Worcs., 25; Shepherdine, Glos., 292; Denton, Lincs., one; Little Paxton, Hunts., 6-8; Spurn, Yorks., 14.

Moving N. — 3 parties: Langstone Harbour,
Hants., one; Cowbit Wash,
Lines., 5; Waterbeach,
Cambs., 6.
,, N.N.W. — 1 party: Cambridge, one.

Departure to the east was noted with 3 birds at Combs Reservoir, Derbyshire, and 91 at Cheddar, Somerset, and 14 which arrived from the west at Hauxton, Cambridgeshire, flew off east with a fifteenth bird. Birds departed to the north-east from Cambridge (5); Frampton-on-Severn, Gloucestershire (20-25); Witeombe, Gloucestershire (50+); Cowpen, Northumberland (2); and Weston-Turville, Buckinghamshire (19). Of 21 birds at Aldermaston, Berkshire, the observer writes that they "drifted" west along the Kennet. It seems likely that this was a local or feeding movement rather than the actual direction of migration.

These 1954 flight-direction records, together with the actual distribution of birds on 9th May, as shown on the map, lend some support to the view of inland routes suggested by *The Handbook* (see also Hinde, 1949, p. 114). It seems likely that from the south-west, birds use mainly the Thames Valley, and the Severn/Avon-Trent routes; and that the Lanes./Cheshire to Yorkshire movement consists of birds which reach the west coast of Britain further north.

FLIGHT DIRECTION IN PREVIOUS YEARS

In the 1948 passage, direction of flight was recorded for thirteen parties of birds: E.S.E. (1); E. (2); E.N.E. (1); N.E. (5), N. (4). In 1949, parties were seen arriving from S.W. and S.S.W. and one party was flying due east. In 1950, 4 parties were recorded as flying E.; 6, N.E.; 3, N. and one, W. (a single S.W. record for June 20th is omitted as being well outside the main migration period in that year).

The records for 1954, therefore, as do those for 1948, 1949 and 1950, suggest that Black Terns passing through Britain in exceptional numbers in spring arrive mainly from the south-west, particularly in the Bristol Channel area, and it seems probable that their main direction of flight between east and north is a continuation of a preferred direction after a displacement to the west of their normal routes. In each of the years summarized, the movement has taken place in the face of easterly head-winds.

The inference from the summary of the 1946 passage, (*antea*, vol. xl, p. 24) that since there were no south coast records in that year the main influx appeared to have been from the east, certainly needs to be questioned. (There was also a notable dearth of south coast records in 1954.) The birds were stated to have spread from the east, inland to the Midlands, and north to Lancashire in 1946. But no single instance was given of direction of flight,

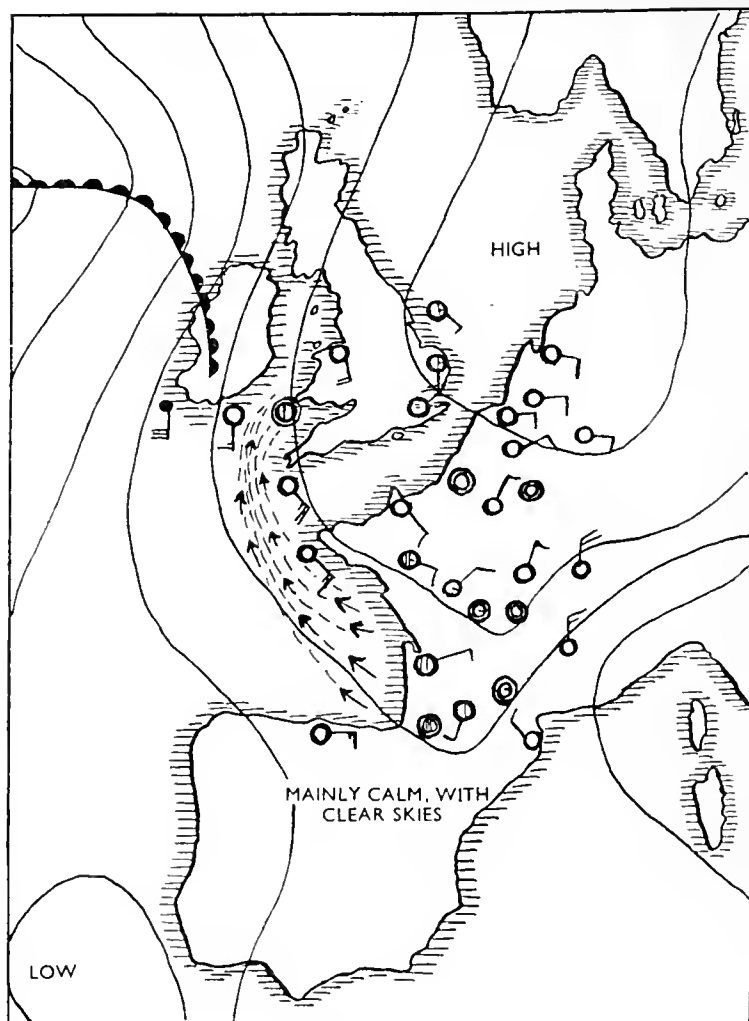
nor were the dates for Lancashire significantly later than those for southern and eastern counties. In view of the information accumulated in subsequent years it seems likely that in 1946, also, Black Terns seen in Britain had arrived from the west and were moving eastwards across the country.

The main direction of movement across Britain in 1948, 1949, 1950 and 1954 does not support the idea of the "filling-up" of S.E. England by birds moving directly towards the shortest sea-crossing to the continent, as being the explanation of later peaks or slower decreases in numbers in Area B. Hinde believed that the later peak in 1948 was due to a second wave of migrants which affected mainly Area B, but this would not appear to be a satisfactory explanation for the continuation of large numbers in S.E. England, later than in Area A, in the years 1950 and 1954, and apparently also in 1946 and 1949.

Two other possible explanations suggest themselves. Birds which were observed flying mainly towards the east coast may have been deflected into south-eastern England by north-easterly winds prevailing at the time. This is considered unlikely for 1954, at any rate, when the northerly element in winds was not very marked. Or again, it may be that, rather than face the alternatives of either a long North Sea crossing, or continuing further north beyond their range, birds turned southwards on reaching the east coast. They would then become subjected to the influence of side winds which would tend to bring them inland again in S.E. England. It has already been established (by observations at Spurn and Gibraltar Point) that some large scale diurnal spring movements, especially of Chaffinches and Hirundines, *do* take a southward course on the east coast, at least as far south as the Wash. Most of the later reports of Black Terns come from East Anglia and that Black Terns *did* move southwards on reaching the North Sea is perhaps the explanation of the arrival, high up from the N.E., of a party of 23 birds which M. J. Seago saw at Rockland Broad, Norfolk, on 12th May. These swooped down to hawk over the Broad. On several occasions they ceased feeding, climbed high, calling loudly, as if departing, but each time they returned—a form of behaviour also noted by several observers on 9th-10th May. On 12th May, also, a Black Tern flew in from the north-east at South Cerney, Gloucestershire, and one flew south past the Isle of May.

METEOROLOGICAL ASPECTS

In 1946, unusually strong north-easterly winds were considered to have carried birds migrating northwards, to the west of their track so that there was an influx to Britain from the *east*. But surely, for this to happen, would require that Black Terns should be over the North Sea far north of their normal range.



WEATHER-MAP OF WESTERN EUROPE FOR 0600 HOURS ON SATURDAY, 8TH MAY 1954. This shows the meteorological conditions which are considered responsible for the large influx of Black Terns (*Chlidonias niger*) to the British Isles on 9th May 1954. The probable route by which the terns arrived is indicated by the arrows and dotted lines.

Hinde (1949, p. 115) noted that in 1948, the main passage of Black Terns through the British Isles took place a day or two after exceptionally warm weather in France and Spain, and in the face of easterly or north-easterly winds.

In 1949 (see Hinde and Wood, 1950, p. 178) and the next year, 1950, the strong movements of Black Terns were again preceded by warmer temperatures in Portugal, Spain and Southern France, and again took place in face of north-easterly winds.

An appreciable rise in temperature can also be traced in Portugal, Spain and south-west France immediately prior to the arrival of large numbers of Black Terns in Britain in 1954. Midday temperatures, in degrees Fahrenheit, at a number of weather stations are given below.

TABLE V—MIDDAY TEMPERATURES (°F.) AT CONTINENTAL WEATHER STATIONS IN PERIOD BEFORE MAIN PEAK OF BLACK TERNS (*Chlidonias niger*) IN MAY 1954.

May	3	4	5	6	7	8	9
Gibraltar ...	66	68	67	70	77	74	Day of peak movement through Britain
Alicante ...	68	64	66	73	75	72	
Barcelona ...	63	—	66	64	66	66	
Madrid ...	55	57	63	72	73	79	
Lisbon ...	—	61	66	75	84	73	
Corunna ...	54	54	—	61	66	72	
Biarritz ...	—	50	55	64	64	64	
Bordeaux ...	54	46	54	57	61	66	

On 7th and 8th May, skies over the Biscay area were mainly clear and, together with the rise in temperature, may have constituted ideal conditions to set birds moving.

As in previous years of heavy passage, winds over Britain, the Channel and North Sea were mainly east to north-east at the time of the peak movement. But it is suggested that this does not explain the large numbers of birds passing through Britain. For north-easterly winds to bring the birds in, their area of origin would have had to be some part of the North Sea which Black Terns cannot normally be expected to reach. The fact that the birds moved across Britain mainly eastwards and north-eastwards, into head-winds, probably meant that they made slower progress, possibly flew lower and came down to rest and feed more frequently, and consequently were more easily noted. This would seem to be the extent of the effect of north-easterly winds, in the British Isles and over the North Sea and the Channel, on the Black Terns migrating through Britain in spring. Head-winds would not materially alter the birds' course, but merely check their progress.

Nor does the evidence from the Continent and from the North Sea coast of Europe suggest that birds reached Britain from the north-east or east. No unusual numbers of Black Terns were noted in France in May. Le Directeur de l'Institut Royal des Sciences Naturelles de Belgique writes that no information had reached him of an abnormal movement. In the Geneva area there was only a very feeble passage (85 birds recorded, compared with a normal spring passage of several hundreds). Rudolph Drost reports that there was no evidence on the German North Sea Coast and its isles of any exceptional passage. On the evening of 5th May, Miss G. van der Baan saw flocks of 60-100 birds flying and feeding over meadows and sheets of water north of Amsterdam—more than she saw at any other time in the spring—but neither G. Smeed, writing from Dordrecht, nor A. C. Perdeck, on Texel, had reports of larger than usual numbers in Holland. Gunnar Otterlind had no reports from Sweden which could be connected

with the large passage through Britain in May. Perhaps the most significant records from Europe are of one bird seen at Lista on 12th May (the species is rarely reported in Norway); and of an increase from 140 birds on 6th May and 165 on 7th May, to *ca.* 500 on 12th May at Kampen, Holland, where there is a large colony (*ca.* 300 nests in 1953 and 1954; Arn. van den Berg, *in litt.*) It would seem that the birds were moving *into* areas east of Britain, rather than that they originated from those areas.

Their area of origin would seem rather to be the Biscay area where conditions on 7th and 8th May, (clear anticyclonic skies and rise in temperature) had been right for Black Terns to resume or continue their migration towards the north and north-east. The weather maps show that on these two days, winds were between

TABLE VI—WIND DIRECTION AND FORCE IN THE BISCAY AREA AT THE TIMES OF BLACK TERN (*Chlidonias niger*) PASSAGE THROUGH BRITAIN IN SPRING 1954.

Date 1954	Winds in Biscay Area and approximate force						No. of Black Terns reported in Britain
April 22	S.E. to E. (3/4)	...	...	...	...	...	0
23	South-easterly (2/3)	...	...	...	...	...	26
24	Easterly (3)	...	...	...	...	...	5
25	Easterly (4/5)	...	...	...	...	...	7
26	Easterly (3/5)	...	...	...	...	...	1
27	E. to N.E. (4/5)	...	...	...	...	...	4
28	„ (3/5)	...	...	...	...	...	0
29	„ (4/5)	...	...	...	...	...	0
30	„ (1/3)	...	...	...	...	...	0
May 1	Southerly (3/5)	...	...	...	...	...	2
2	Westerly (4)	...	...	...	...	...	16
3	N.N.W. (5/6)	...	...	...	...	...	9
4	N.N.W. (5/6)	...	...	...	...	...	12
5	Between S.W. and N.W. (3/5)	...	...	...	...	...	8
6	W.N.W. (4/5)	...	...	...	...	...	10
7	S.E. (4) ; Calm over N. Spain	...	...	...	...	...	10
8	S.E. (4)	...	...	...	...	...	63
9	E.S.E. (3)	...	...	...	...	...	1,979
10	Between S.W. and N.W. (1/2)	...	...	...	...	...	456
10	E.N.E. (2) in south ; S.W. (4) at Brest	...	...	...	...	...	49
12	Between N.N.E. and E. (3)	...	...	...	...	...	44
13	W.N.W. (4) at Brest ; S. (2) at Bordeaux	...	...	...	...	...	11

E.N.E. and S.S.E. in all areas of the Bay of Biscay (see Table VI). It is suggested that these lateral winds deflected birds in S.W. France to the west of their normal routes, bringing them into the South Irish Sea and Bristol Channel Areas, and that they then passed across Britain from the west, proceeding in a preferred direction *in spite of* the light east to north-east headwinds.

Williamson tells me (*in litt.*) that for the period 2nd-7th June 1954, when there were some late records of Black Terns, there

was again an anticyclone over North Britain, the North Sea and west Norway. Winds in Biscay were again E.N.E., backing farther out to sea, so that a similar approach to the south Irish Sea and Severn Estuary is possible for that period.

TABLE VII—DATES OF PEAK MOVEMENTS OF BLACK TERNS (*Chlidonias niger*) THROUGH BRITAIN IN 1946, 1948, 1949 and 1950, AND THEIR CONNECTION WITH EASTERLY WINDS IN THE BISCAY AREA.

1946

Date	Winds in Biscay Area and approximate force						No. of Black Terns reported in Britain
May 7	Calm in S. ; Easterly (5) at Brest						—
„ 8	S.E. (3)						53
„ 9	E. to E.N.E. (4)						114
„ 10	S.E. (2)						141
„ 11	N.E. (2)						233
„ 12	Calm in S. ; N.N.E. (4) at Brest						118

1948

May 14	—	...	...	...	...	...	—
„ 15	N.E. (2)	...	...	...	...	...	5
„ 16	Calm in S. ; E.N.E. (3) at Brest						151
„ 17	„ „ N.N.E. (2)	„	...	...	...	...	313
„ 18	S.E. (2)	...	...	...	...	...	832
„ 19	Easterly	...	...	...	...	...	322
„ 20	N.E. (3/4) at Brest						273
„ 21	N.N.E. (2)						475
„ 22	—	...	...	...	...	...	74

1949

May 10	South-easterly (3/4)						—
„ 11	Calm in South ; E.N.E. (4) at Brest						3
„ 12	E.N.E. (2/3)						95
„ 13	„ (2)	...	...	...	...	...	150
„ 14	Calm						199
„ 15	Calm						72
„ 16	Calm						3

1950

May 10	E. to S.E. (3/4)						19
„ 11	North-easterly (3/4)						19
„ 12	E.N.E. (4)						71
„ 13	E. to S.E. (4)						380
„ 14	Easterly (4)						575
„ 15	E. to N.E. (4)						220
„ 16	N.N.W. in S. ; E. (3) at Brest						277
„ 17	W. to N.W. (3)						180
„ 18	N.N.W. (3/4)						128
„ 19	—	...	...	...	...	...	3

It may be significant that, apart from two single birds, all Black Terns seen in the period 2nd-7th May, when the winds were not easterly in Biscay (see Table VI), were reported from Norfolk and Area A, and all but three of the birds in Area A were in eastern coastal counties or Lancashire. These more easterly and northerly records may be accounted for by a cold front which moved north from the Channel during the night of 1st/2nd May, which Williamson and Sandeman (1954) considered had affected migrants in the Low Countries. At the beginning of this period, easterly winds brought increased numbers of migrant Passerines to Fair Isle. 2nd May was a day of considerable movement at the Isle of May. Spurn had increased numbers of Passerines and the first Pied Flycatchers (*Muscicapa hypoleuca*) on 2nd May, while a Robin (*Erithacus rubecula*) ringed there on 3rd May was recorded by R. Chislett as looking "very Continental." Robins which were believed to be "Continental" were particularly numerous among the fresh waves of migrants reaching Fair Isle and the Isle of May on 4th and 5th May. It is obvious that the Black Terns seen at this time had reached Britain by a different route from those during the peak period.

Reference to the weather maps for the relevant part of May in years of previous heavy movements of Black Terns through Britain, shows that in those years, as in 1954, the passage took place at a time when an anticyclone was centred over North Britain or the northern part of the North Sea, and a low to the west of Spain. Not only has the passage been preceded in each year by a rise in temperature in Portugal, Spain and S.W. France, but also by easterly winds in the Biscay area. The evidence suggests that a great deal of Black Tern migration takes place during the night, when guiding lines such as rivers and coasts would be of less help to the birds which would then be more strongly affected by side winds. South-easterly winds in particular would cause Black Terns moving towards the north-east through S.W. France to be deflected in such a direction that they would reach Britain.

SUMMARY

1. In 1954, a large passage of Black Terns was noted through the British Isles.

2. A few birds passed through in the latter half of April, and some movement continued into early June, but the largest numbers were concentrated into the comparatively short period, 8th to 12th May.

3. Direction of flight was noted in 31 instances and suggested that birds were moving mainly between east and north-eastwards, from the west of the British Isles towards the east coast.

4. Distribution of birds on the peak date, 9th May, lends some support to the idea of routes from the Severn to the Thames, Wash

and Humber; and from Cheshire and south Lancashire to Yorkshire and the Humber.

5. Points of similarity between this 1954 passage and earlier large movements of Black Terns are considered. In each, the movement has been preceded by a rise in temperature in the Iberian Peninsula and the Biscay area and has taken place in face of east or north-easterly winds over the British Isles.

6. It is suggested that birds in 1954 had been carried west of their normal routes by easterly lateral winds in the Biscay area, and it is shown that previously recorded large movements of Black Terns through Britain were also preceded by easterly winds in Biscay.

REFERENCES

- British Birds*, xl: 24-26, 93, 378 (1947): "Exceptional passage of Black Terns in 1946."
- GEROUDET, PAUL (1947): "Black Terns in May, 1946, on the Lake of Geneva." *Brit. Birds*, xl: 316.
- GOODBODY, IVAN M. (1951): "Inland passage of Black Terns in the spring of 1950." *Brit. Birds*, xlv: 170-174.
- HINDE, R. A. (1949): "Exceptional inland passage of Black Terns in 1948." *Brit. Birds*, xlii: 113-117.
- (1951): "Further report on the inland migration of waders and terns." *Brit. Birds*, xlv: 329-346.
- and HARRISON, J. G. (1949): "Inland migration of waders and terns." *Brit. Birds*, xlii: 309-319.
- and WOOD, J. D. (1950): "Inland passage of Black Terns in the spring of 1949." *Brit. Birds*, xliii: 177-179.
- PETERSON, R., MOUNTFORT, G., and HOLLOM, P. A. D. (1954): *A Field Guide to the Birds of Britain and Europe*. London.
- RUDEBECK, GUSTAF (1950): *Studies on Bird Migration*.
- WALLER, R. H. (1955): "Reverse migration of Black Terns off Italy." *Ibis*, 97: 145.
- WILLIAMSON, K. (1952): "Migrational drift in autumn, 1951." *Scot. Nat.*, 64: 1-18.
- (1953): "The nature of spring and autumn passage migration through Britain." *Bull. Fair Isle B. Obs.*, No. 10; 3-10.
- and SANDEMAN, G. L. (1954): "Spring migration at Fair Isle and the Isle of May in 1954." *Bull. Fair Isle B. Obs.*, Vol. 2, No. 4: 160-176.
- WITHERBY, H. F. *et al.* (1941): *The Handbook of British Birds*. London. Vol. V: 2-6.

APPENDIX—RECORDS OF BLACK TERNS (*Chlidonias niger*) IN BRITISH ISLES IN SPRING 1954

Detailed records are summarized below, in vice-county sequence, together with names of observers to whom we are indebted for their help.

CORNWALL.

April 23rd: Dozmary Pool (Bodmin Moor), one.

April 24th: St. Ives Bay, 2.

(J. E. Beckerlegge; J. C. C. Oliver.)

DEVON.

- April 23rd*: Taw-Torridge Estuary, off Saunton, 2.
May 9th: Exe Estuary, 17+.
May 17th: Braunton Marshes, one.
 (R. F. Moore; D. F. Musson; A. V. Smith; F. R. Smith Mrs. D. Wilson; Devon Bird Watching and Preservation Society.)

SOMERSET.

- April 25th*: Cheddar Res., 2.
May 8th: Cheddar Res., 6.
May 9th: Cheddar Res., 91; Chew Valley Res., ca. 90; Blagdon Res., 10.
 (G. Boyle; P. J. Chadwick; B. King; W. T. Pares; W. L. Roseveare.)

WILTSHIRE.

- May 27th*: Gravel Pit near Salisbury, ca. 20.
 (Mrs. R. G. Barnes; H. F. Patrick; Wiltshire Archaeological and Natural History Society.)

HAMPSHIRE.

- April 23rd*: Over R. Meon, nr. Fareham, 2.
April 24th: Stanpit Marsh, nr. Bournemouth, one.
May 6th: R. Avon, nr. Ringwood, one.
May 9th: Langstone Harbour, one; Winnall, nr. Winchester, 4.
 (K. Brown; E. Cohen; Mrs. Goodhart; H. J. Goodhart; W. H. Truckle; D. and R. White.)

SUSSEX.

- May 8th*: Chichester Harbour, 3.
May 9th: Heyshott Pond, nr. Midhurst, one.
May 10th: Knepp Castle Lake, nr. Horsham, 4.
 (Miss P. Bond; J. Clegg; G. H. Rees; R. Sandison.)

KENT.

- April 24th*: Dungeness Pt., one; Kent/Sussex border, one.
April 25th: St. Mary's Bay, one.
May 1st: Dungeness Pt., one.
May 1st/2nd: circling Dungeness light, 3.
May 7th: Dungeness Pt., one.
May 8th: Dungeness Pt., 22.
May 9th: Dungeness Pt., 76; Dengemarsh Beach, 43.
May 10th: Dungeness Pt., 4; G. Pit, nr. Lydd, 8.
May 15th: Dungeness Pt., one.
 (H. E. Axell; H. A. R. Cawkell; I. J. Ferguson-Lees; P. F. Le Brocq; D. I. M. Wallace; Dungeness Bird Obs.)

SURREY.

- May 9th*: Barn Elms Res., 12; Virginia Water Lake, 3.
May 10th: Barn Elms Res., 21; Guildford S. F., 10; Frensham Gt. Pond, one.
May 11th: Frensham, one.
 (M. F. B. Baker; G. A. Hebditch; H. P. Medhurst; J. J. Swift; C. M. Veysey; Guildford Nat. Hist. and Lit. Soc.)

ESSEX.

- May 9th*: King George V. Res., Chingford, 14; Abberton Res., 30+; Rush Green G. Pit, South Romford, 5.
May 10th: King George V. Res., 6.
May 11th: King George V. Res., 2; Gosfield Lake, one.
May 12th: King George V. Res., 2; Abberton Res., one.
May 16th: King George V. Res., one.
May 19th: Abberton Res., one.
June 5th: King George V. Res., one.
 (L. C. Adkins; I. J. Ferguson-Lees; M. S. Freeman; I. Higgins; J. L. F. Parslow; G. A. Pyman; H. R. Tutt; P. W. D. Waite; South Essex Nat. Hist. Soc.; Essex Bird Watching & Preservation Soc.)

HERTFORDSHIRE.

- May 9th*: Tring Reservoirs, 24+; Old Parkbury G. Pit, 15; Hampermill Lake, 6; Aldenham Res., 4.
May 10th: Tring Reservoirs, 30; Old Parkbury G. Pit, 9; Hampermill Lake, 14; Harefield G. Pit, 5; West Hyde G. Pit, 16.
May 11th: Tring Reservoirs, one.
 (J. S. Carter; P. L. Garrett; H. H. S. Hayward; I. Johnston; H. Jones; K. A. Landon; L. Lloyd-Evans; B. P. Pickness; Mrs. H. M. Rait-Kerr.)

MIDDLESEX.

- May 9th*: Staines Res., 7.
May 13th: Staines Res., 8.
May 15th-19th: Staines Res., 3.
June 2nd: Brent Res., one.
 L. Baker; P. W. P. Browne; M. Cooper; R. S. Hatch; D. K. Mugford; B. P. Pickness; D. A. Preston; M. G. Ridpath; W. G. Teagle; London Nat. Hist. Soc.)

BERKSHIRE.

- April 25th-26th*: Burghfield G. Pit., nr. Reading, one.
May 9th: Aldermaston Wharf G. Pit, 21; nr. Reading, 10; over Thames, Wallingford, c. 14.
May 10th: Wallingford S. F., 3.
 (Bruce Campbell; W. D. Campbell; M. Davies; W. E. Dickinson; J. Fox; K. E. L. Simmons; D. M. Turner-Ettlinger.)

OXFORDSHIRE.

- May 9th*: R. Cherwell, nr. Water Eaton, 10-20.
 (Bruce Campbell; J. Kempson.)

BUCKINGHAMSHIRE.

- April 23rd*: Marlow G. Pits, 21.
April 27th: Marlow G. Pits, 4.
May 9th: Weston-Turville Res., 19; Marlow G. Pits, 17.
May 10th: Weston-Turville Res., 19; Marlow G. Pits, 2.
 (Mrs. J. B. Cowdy; J. Field; P. L. Garrett; J. Goring; Middle Thames Nat. Hist. Soc.)

SUFFOLK, E.

- April 25th*: Levenmere Lake, Bury St. Edmunds, one.
May 23rd: Walberswick, 13.
 (A. L. Bull; Mrs. R. Palmer; P. R. Westall.)

NORFOLK.

- May 1st*: Rockland Broad, one.
May 2nd: Horsey Mere, one; Cley, one.
May 3rd: Cley, 3; Stanford Water, nr. Thetford, 2.
May 4th-7th: Cley, 4.
May 6th: Horsey Mere, 3; Hickling Broad, one.
May 8th: Cley, 3; Wroxham Broad, 5.
May 9th: Cley 20, +12; Thompson Water, ca. 50; Scolt Head Island, 70; Breydon Water, 6; Blakeney Harbour, 30; Horsey Mere, 3; Taverham G. Pit, nr. Norwich, 40-50; Blickling Lake, 11.
May 10th: Cley, 6; Rockland Broad, 114; Hickling Broad, 17 and 18; Taverham G. Pit, 36; Mickle Mere, 10.
May 11th: Scolt Head Island, 3; Rockland Broad, 19.
May 12th: Cley, 3; Rockland Broad, 23; Taverham G. Pit, 7.
May 13th: Cley, 2; Rockland Broad, one.
May 14th: Cley, 4; Rockland Broad, one.
May 15th-19th: Cley, 3, decreasing to one.

May 23rd: Hickling Broad, one.
 (R. Chestney; G. Crees; A. H. Daukes; T. Easter; E. A. Ellis; R. Harrison; G. Jessop; D. Layton; L. Lloyd; E. H. Lynn-Allen; E. Piggin; C. D. Raby; R. A. Richardson; A. W. P. Robertson; J. D. Scott; M. J. Seago; R. Sewell; H. M. Stanford; Cley Bird Obs.)

CAMBRIDGESHIRE.

April 25th: Hauxton G. Pit, 2.
 May 9th: Cambridge S. F., 7(?+5); G. Pit nr. Waterbeach, 6;
 Hauxton G. Pit, 15.
 May 10th and 12th: Cambridge S. F., one.
 May 14th: Landbeach G. Pit, one.
 May 16th: Cambridge S. F., one.
 June 5th: Cambridge S. F., one.
 (C. J. Davies; G. M. S. Easy; D. Farren; A. J. Holcombe; D. A. Jones; Miss P. B. Lind; L. Lloyd-Evans; R. A. Richardson; P. D. Sell; T. C. Smout; A. E. Vine; Cambridge Bird Club.)

BEDFORDSHIRE.

May 9th: Arlesley G. Pits, 8; Bedford S. F., 22; over R. Ouse, Bedford, 2.
 (F. Gribble; A. R. Jenkins; Bedford School.)

HUNTINGDONSHIRE.

May 4th: over R. Ouse, Bluntisham, 3.
 May 7th: over R. Ouse, Bluntisham, 2.
 May 8th: Little Paxton G. Pit, nr. St. Neots, 6-8.
 May 10th: Fletton, nr. Peterborough, 5.
 May 15th: Fletton, one.
 (C. F. Tebbutt.)

NORTHAMPTONSHIRE.

May 9th: R. Nene, nr. Clifford's Hill, 5; Clifford's Hill G. Pit, 8; Sywell Res., 5; Ecton S. F., 6; nr. Higham Ferrers, 25.
 June 3rd: Sywell Res., one.
 (F. Gribble; R. S. Harkness; A. J. B. Thompson.)

GLOUCESTERSHIRE.

May 9th: *Severn Estuary*: Sheperdine, 292; nr. New Grounds, ca. 50; Frampton-on Severn, 20-25.
 Coombe Hill Canal, 2; Witcombe Res., 50+
 Dowdeswell Res., one.
 May 12th: South Cerney, one.
 (H. H. Davies; N. J. S. Gurney; D. R. Hamblett; J. M. Harrop; L. W. Hayward; R. H. Poulding; T. P. Walsh; G. Waterston; Cheltenham & District N. S.; Dursley & District Bird Watching & Preservation Soc.; Bristol Nat's' Soc.)

WORCESTERSHIRE.

May 3rd: Bittell Reservoirs, one.
 May 8th: Bittell Reservoirs, 6.
 May 9th: Bittell Reservoirs, 25+.
 May 10th: Bittell Reservoirs, 3.
 (H. G. Alexander; A. R. M. Blake; J. Lord; G. Rutter; W. N. A. Thompson; West Midland Bird Club.)

WARWICKSHIRE.

May 2nd: Alvecote Pools, one.
 May 9th: Alvecote Pools, 10.
 May 10th: Alvecote Pools, 3.
 May 11th: Alvecote Pools, one.
 (G. A. Arnold; D. E. Jebbett; West Midland Bird Club.)

STAFFORDSHIRE.

- May 2nd:* Bellfields Res., one.
May 8th: Cannock Res., 8.
May 9th: Cannock Res., 16; Bellfields Res., 30; Branston Pools, 7; Gailey Pools, one.
May 10th: Bellfields Res., 5.
May 12th: Branston Pools, one.
June 3rd: Cannock Res., one.
 (C. Clarke; D. Hollands; W. K. Marshall; P. R. Powell; M. J. Rogers.)

SALOP.

- May 10th:* Aqualate Mere, 12.
 (A. R. M. Blake.)

CARMARTIENSHIRE.

- May 9th:* Laugharne Burrows, 2.
May 15th: Laugharne Burrows, one.
 (D. K. Bryson; W. Condry; J. F. Thomas; West Wales F. S.)

PEMBROKESHIRE.

- May 8th:* Dale, one.
 (H. Greenfield, per P. E. Davis.)

FLINTSHIRE.

- May 9th:* Llynhelleg Lake, nr. Whitford, *ca.* 20.
 (M. Jones.)

ANGLESEY.

- May 10th:* Malldraeth, 2.
 (E. K. Allin; A. E. Male; per A. B. Sharrocks, Cambrian Ornithological Soc.)

LINCOLNSHIRE.

- May 2nd:* Burton G. Pits, nr. Lincoln, one.
May 3rd: Somercoates, nr. Louth, one.
May 9th: R. Welland, Cowbit Wash, 5; Denton Res., Grantham, one; Goxhill, one; Besthorpe G. Pits, Newark, 10; Tattershall, 8.
May 10th: Cleethorpes, one; Saxilby, 8.
 (F. W. Bitten; R. K. Cornwallis; C. A. Ottoway; W. M. Peet; E. J. Redshaw.)

LEICESTERSHIRE and RUTLAND.

- May 9th:* Groby Pool, 11; Eye Brook Res., 15; Cropston Res., 3; Thornton Res., 3; Cottesmore, 13.
May 10th: Saddington Res., 3; Cottesmore, 10.
May 11th: Cottesmore, 2.
 (R. A. O. Hickling; E. L. Roberts, Leicestershire & Rutland Ornithological Society.)

NOTTINGHAMSHIRE.

- May 9th:* Netherfield G. Pit, *ca.* 30; Hoveringham G. Pit, 16.
May 11th: Nottingham S. F., 4.
May 17th: Netherfield G. Pit, one.
June 3rd: Hoveringham G. Pit, one.
 (J. Staton; Trent Valley Bird Watchers.)

DERBYSIRE.

- May 9th:* Kedleston, *ca.* 20; Combs Res., 3; Ednaston, 9.
 (S. S. Blythe; W. K. Marshal; Viscount Scarsdale.)

CHESHIRE.

- May 9th*: Marbury Mere*, 21; Rostherne Mere, 53; Tabley Mere, nr. Knutsford, 5; Sutton Res., nr. Macclesfield, 20-30; West Kirby, one; Redesmere, 36.
- May 10th*: Oakmere, 2.
- June 4th*: Marbury Mere*, one.
- June 22nd*: Altrincham S. F., one.
- (E. L. Arnold; T. H. Bell; A. W. Boyd; J. D. Craggs; W. Mulligan; P. Newton; G. M. Rolls; L. P. Samuels; S. Stanley; G. Trelfa.)

* Marbury Mere, both here and in the main body of the paper refers to Marbury, Gt. Eudworth.

LANCASHIRE.

- May 2nd*: Lune Estuary, one (to May 5th); Marton Mere, Blackpool, one.
- May 3rd-4th*: Pennington Flash, Leigh, one.
- May 4th*: Marton Mere, 3.
- May 5th*: Marton Mere, one.
- May 9th*: Astley Flash, 3; Pennington Flash, ca. 43.
- May 10th*: Belmont, 2-3; Pennington Flash, 4.
- May 11th*: Leighton Moss, 6; Pennington Flash, one.
- May 17th*: Freckleton, 3.
- June 5th*: Astley Flash, one.
- (R. Cooke; T. Edmondson; N. Harwood; Rev. Canon G. A. K. Hervey; F. R. Horrocks; M. Jones; F. Lowe; D. J. McCullagh.)

YORKSHIRE.

- May 2nd*: Fairburn, 4; Chelker Res., 2.
- May 3rd*: Whitby, one.
- May 5th*: Eberston, nr. Thornton-le-Dale, one.
- May 7th*: Albert Dock, Hull, 3.
- May 8th*: Sunk Island, one.
- May 9th*: Spurn, 14; Skipwith Common, 3; Malham Tarn, 21; Brotherton/Fairburn, 34+; Eccup Res., 8; Chelker Res., 26; Gouthwaite Res., 6; Ringstone Edge Res., 7; Winterset Res., 10; Swillington, 8; Tong, Bradford, 7.
- May 10th*: Ben Rhydding S. F., 3; Eccup Res., 35; Allerton Bywater, 1.
- May 11th-12th*: Fairburn, 4.
- June 7th*: Fairburn, 3.
- (G. H. Ainsworth; I. G. Brown; H. Brunton; H. O. Bunce; W. A. Butterfield; G. Carr; R. Chislett; F. Cooke; J. Cudworth; B. Dale; K. Dale; K. Dawson; R. F. Dickens; W. E. Dickinson; R. M. Garnett; E. Grace; P. F. Holmes; R. V. Jackson; C. E. King; A. H. B. Lee; J. Leedall; J. D. Pickup; L. Thompson; A. F. G. Walker; Leeds & District Bird Watchers' Club; Spurn Bird Observatory; Yorkshire Naturalists' Union; Malham Tarn Field Centre; Bradford Naturalists' Soc.)

DURHAM.

- May 5th*: Cowpen Marsh (Tees Estuary), 2.
- May 6th*: Cowpen Marsh, one.
- May 8th-10th*: Bolden Flats, Sunderland, one.
- May 9th*: Cowpen Marsh, 3.
- May 11th*: Cowpen Marsh, 2.
- (F. Grey; P. J. Stead; G. W. Temperley; Nat. Hist. Soc. of Northumberland, Durham and Newcastle-upon-Tyne.)



U.S. National Audubon Society

Allan D. Cruickshank

MALE YELLOWTHROAT (*Geothlypis trichas*): AMERICA

About the size of a Willow Warbler (*Phylloscopus trochilus*), olive-brown above and mainly yellow below, the adult male Yellowthroat is made distinctive by his black "burglar's mask" extending from cheek to cheek across the forehead.
(see page 170)



U.S. National Audubon Society

Allan D. Cruickshank

MALE YELLOWTHROAT (*Geothlypis trichas*): AMERICA

The shape and colouration of the mask is better indicated in this photograph than in that on plate 21. The well-defined ash-grey area which forms a border behind the black can also be seen. The crown is greener than the rest of the upper-parts and the yellow below is brightest at the throat.



U.S. National Audubon Society

Samuel A. Grimes

FEMALE YELLOWTHROAT (*Geothlypis trichas*) AT THE NEST:

FLORIDA, UNITED STATES, MAY 1934

The female is much duller than the male, being browner above and with a more buffish tinge to the yellow on the under-parts; in particular, she lacks all trace of the black mask. The nest, usually on or near the ground, is a bulky structure of loosely woven grasses, reeds and leaves (see also plate 24).



U.S. National Audubon Society

Samuel A. Grimes

NEST AND EGGS OF YELLOWTHROAT (*Geothlypis trichas*): AMERICA.
The open nest is lined with finer grasses, fibres and, sometimes, hair. The clutch usually consists of four eggs and these are creamy-white, speckled, chiefly at the larger end, with reddish-brown. (See page 171)

NORTHUMBERLAND.

May 4th: Holy Island, one.

May 14th-15th: Low Newton, nr. Embleton, one.

(W. S. Craster; E. A. R. Ennion; G. W. Temperley; Nat. Hist. Soc. of Northumberland, Durham and Newcastle-upon-Tyne; Monks' House Bird Observatory.)

SCOTLAND, ISLE OF MAY.

May 12th and 14th: one (first record).

(M. F. M. Meiklejohn; G. L. Sandeman, Isle of May Bird Observatory.)

SHETLAND, BAY OF SCOUSBURGH.

June 18th-21st: one twice seen between these dates.

(Capt. D. Stewart; *Fair Isle Bird Obs. Bull.*, Vol. 2, No. 4.)

EIRE, THE KNOCK, BALBRIGGAN, CO. DUBLIN.

May 9th: 3.

May 10th and 11th: 2.

(R. D. Baker; F. W. Fox; I. Franklin; G. R. Humphreys; A. Mason.)

The undermentioned, whose names do not appear under the county lists, have also sent information. Negative records have been extremely useful in giving an indication of peak dates, actual distribution, and how soon birds have passed.

Dougal Andrew; Miss G. van der Baan (Amsterdam); R. H. Baillie; Arn van den Berg (Controleur-Vogelwet, Kampen, Holland); E. Blezard; W. S. Cowin; Dr. Rudolf Drost (Vogelwarte Helgoland); Paul Géroudet (Editor of *Nos Oiseaux*, Switzerland); Holger Holgersen (Stavanger, Norway); Noël Mayaud (Editor of *Alauda*, France); Gunnar Otterlind (Editor of *Var Fagelvärld*, Sweden); A. C. Perdeck (Vogeltrekstation Texel, Holland); G. Smeed (Dordrecht, Holland); M. K. Swales; R. Thearle (Bardsey Bird and Field Observatory); The Director of Institut Royal des Sciences Naturelles de Belgique; Nederlandsche Ornithologische Vereeniging, Amsterdam; Skokholm Bird Observatory; Dr. F. Bernis (Madrid, Spain); E. D. H. Johnson (Jersey); C. A. Blume (Copenhagen, Denmark).

SOME PHOTOGRAPHIC STUDIES OF THE YELLOWTHROAT

Photographed by ALLAN D. CRUICKSHANK and SAMUEL A. GRIMES
(Plates 21-24)

IN place of the Sylviidae so widespread throughout the Old World, there is in America a family of wood warblers, the Parulidae, which includes more than 50 species of a number of genera that are not represented at all in the Palæarctic. Until recently the only two records of American wood warblers in Britain—the Yellow Warbler (*Dendroica petechia*) in Durham in 1904, and the Black-and-white Warbler (*Mniotilta varia*) in Shetland in 1936—have been regarded as having escaped from captivity, or somehow reached this country by artificial means. In the last few months, however, two more species have occurred in circumstances which make it clear that they should be regarded as genuine vagrants to the British Isles. One of these was the Yellowthroat (*Geothlypis trichas*) trapped on Lundy on 4th November 1954 (see pp. 145-147); the other was a Myrtle Warbler (*D. coronata*) seen at Newton St. Cyres, Devon, from 5th January 1955 to 10th February, when it died.

The Yellowthroat breeds throughout the North American continent from south-east Alaska to central Mexico, being found in suitable localities in every part except the far north, it being absent, according to the outline given by A. C. Bent in *Life Histories of North American Wood Warblers* (1953, pp. 542-565), from the Canadian provinces north of 55 degrees, except in the west. It is migratory and normally winters in the southernmost United States, Mexico, Central America and the West Indies. However, in the words of Bent—"so many individuals . . . have been found wintering well north of the usual winter range of these birds that it has become something more than an accidental occurrence." So much so that there are now numerous November and December records as far north as New York.

The adult male Yellowthroat has as its most striking feature a black "burglar's mask" extending from the forehead around the eye and across the cheek. It is bordered behind with a clearly defined ash-grey area, the extent of which with the black is quite well shown in plates 21 and 22. Above, including the wings and tail, the bird is olive-brown in colour, greener on the crown, on the upper tail-coverts and on the edges of the wing feathers. Below it is a clear lemon-yellow, this being particularly striking at the throat, thus giving the bird its name. The flanks are washed with dark olive-brown, and there is a buff colour band across the breast. Tinges of cinnamon occur to a variable extent on the under-parts, except the throat. In its first winter the male lacks the black mask, though traces of it are present on the sides of the head, varying from a few feathers to a considerable area, but the black is always

obscured as these feathers have grey tips and edgings. This was the plumage of the bird on Lundy. The female is by comparison a very dull creature (see plate 23), for she lacks entirely the black on the head, the upper-parts are browner and less olive, and below the yellow is dulled with a buff tinge.

This species is typically associated with water. The accounts quoted by Bent show that it winters in low-lying pastures where the grass is tall, in marshy areas, reed-beds, wet thickets, and alongside rivers. In the breeding season it is fond of the borders of marshes, and is particularly found on little islands in swampy areas or in the neighbourhood of small streams running through woody areas. On the other hand, individual pairs may at times be found well away from wet situations, in shrubbery and brambles, and along the edges of woods.

The nest is usually, but not always, on or a few inches above the ground, lodged in tussocks of grass, reeds, brambles, etc., and often close by a shrub or small tree. It is well concealed, and is a rather large and bulky structure composed of dead grass, reed stems, dead leaves, etc., loosely and untidily put together (see plate 23). A lining composed of fine grasses, fibres and, sometimes, hair gives a neater appearance (see plate 24) to the inside of the cup, which is about $1\frac{3}{4}$ inches wide and $1\frac{1}{2}$ inches deep. Usually 4 eggs are laid, though the clutch may vary from 3-5. These are creamy-white, speckled chiefly at the large end with reddish-brown, amber and black. They are about the size of those of a Lesser Whitethroat (*Sylvia curruca*). Incubation lasts about 12 days, and is by the female alone. Both sexes feed the young, which remain in the nest for 10 days. Most pairs are double-brooded.

Throughout most of its range the Yellowthroat is one of the most abundant warblers, well known because the male is so easily recognised and because of its characteristic song made up of loud, clear and strongly accented syllables. From the discussion given by Bent, it is clear that there is much individual variation but apparently the song normally consists of three or four repetitions of a phrase of two to six notes, with one note strongly emphasized, the whole lasting only $2\frac{1}{2}$ seconds. A common version of the phrase has been rendered as—"I beseech you." There is also a flight-song of short, confused, spluttering notes, ending as the bird flies up to the highest point of its flight, after which it drops silently to the place where it started.

The Yellowthroat has a number of very wren-like characteristics. It comes out on open perches for a few seconds, and then dodges quickly out of sight. When disturbed, it flies for only a few yards before disappearing into the next piece of cover. At times it utters a variety of chattering and scolding notes as it darts from place to place out of sight, and then re-appears. The usual call note is harsh and loud. Like most warblers, the species is almost entirely insectivorous, feeding on flies, ants, spiders, moths, grubs and so on.

I.J.F.-L.

THE FLEDGING OF A BROOD OF RAVENS

By E. F. WARREN

BETWEEN 8th and 16th May 1953 I had the opportunity of watching the fledging of a brood of five young Ravens (*Corvus corax*) on Skokholm, Pembrokeshire. The island supports only one breeding pair and that year they had nested on the north-facing Guillemots' or Ravens' cliff, choosing a ledge only some 15 to 20 feet from the top of an overhanging cliff itself some 100 feet high, and the nest was sited so as to be inaccessible to man except by swinging on a rope. It could be watched obliquely from across a gully at some 20 yards range, or more directly at a range of some 40 yards.

On 9th May all five young Ravens were on the nest-ledge. Neither parent was present at 11.45 (G.M.T. throughout) nor was either seen to visit the nest-ledge by the writer or any other observer during the period under review, though one at least was frequently perched on one or other of a number of rock pinnacles within 200 yards of the nest. The young were all well-feathered, but a gradation in plumage was clearly visible, the most developed appearing very like an adult Raven and only reliably distinguishable by a pink area around the gape which all the young birds possessed. The least developed bird had substantial amounts of down fluffing out through its feathers particularly on the flanks. The young were not distinguishable from the adults by the browner colouring referred to in *The Handbook*, even though one young bird was seen at a range of 4 feet a day or two after leaving the nest.

The first young Raven to fly—the most developed—did so, unwitnessed by man, between 11.30 and 16.30 on 10th May, the time until then having been apparently* occupied by all five young birds either in resting or in strutting about the nest itself and the ledge on which it rested, preening, stretching legs and wings and flapping their wings excitedly. These activities were sometimes conducted by all the birds together, but more commonly by two or three while their fellows sat huddled on the ledge or nest. It was noticeable that the excited wing-flapping was conducted very much more often than not with the bird facing inward toward the cliff, and that on those occasions when it was facing outward the young bird sometimes appeared almost to lose balance and launch itself prematurely. The most ambitious "flight" carried out by any bird at the nest was a tumbling drop accompanied by wing-flapping from the nest itself to the lowest part of the nest-ledge, a "flight" of perhaps 3 or 4 feet, with a downward drop of 2 feet.

* Until the first young bird had flown I paid only occasional visits to the nest but thereafter, till all the birds had flown, the nest was watched by the writer for some 5 or 6 hours daily, spread between morning, afternoon and evening, and by other watchers on the island in passing.

At 17.25 on 10th May the second young Raven flew, stepping with apparent calmness from the ledge after only a very short spell of "exereising", its departure producing no noticeable reactions from the three birds remaining on the ledge. Almost at the very moment that this fledging bird took to the wing, one parent flew toward it from one of its sentry posts—a rock pinnacle some 100 yards from the nest—and the second parent almost immediately flew up too. Both parents then accompanied the young bird on its first flight of perhaps some 300 or 400 yards, out over the sea in a semi-circle, returning to a neighbouring headland. The young bird flew steadily and well, but bounced and stumbled on landing. Immediately after this flight I left the nest area but returning later between 19.30 and 20.00 found both parents on this same neighbouring headland with one young bird—presumably this one that had most recently flown, though it may have been the first bird to leave.

Sometime between 20.00, when I last saw the Ravens on 10th May, and about 21.00, when another observer, Mr. A. Phillips, looked at the ledge, a third bird left the nest—somewhat suprisingly, for by 20.00 there was practically no activity among the three birds on the nest ledge, and I had coneluded that they were all preparing to roost. However, the flight was evidently successfully performed and the first night away from the nest safely passed, for at 8.15 on 11th May the three fledged young and both parents were all seen together on a headland near the nest. This was the first time that the first bird to fly had definitely been seen since it left the nest 16-21 hours before.

At 8.15 on 11th May, when the parents and the three fledged young were all seen together, the two remaining birds were still on their nest-ledge, and there they remained at any rate until after 20.30. The same sort of "exereising" went on spasmodically, with noticeeably less activity around mid-day and in the early afternoon, but neither bird brought itself to step off into space. As has been mentioned, in the times during which the nest was under observation neither adult was seen to come to it, and there is certainly no positive evidenee that the young were ever fed at the nest during the period under review; nor was there any sign of any freshly brought animal remains about the nest or ledge. Indeed, on the 11th the two birds remaining at the nest appeared to be feeling some hunger: they frequently turned over such debris as there was on the nest and ledge and pulled pieces of twig from the nest and tried to eat them. Between 13.30 and 15.00, however, each bird defaecated at least once and each threw up a pellet that dropped to some boulders at the foot of the overhanging cliff. These boulders were accessible and going down to them I found two fresh pellets containing masses of feathers, and dry ones containing rabbit-fur and bones and the foot of a Puffin (*Fratercula arctica*) among other and unidentified material.

At 20.30 on this day one of the adults was seen with the three fledged birds and the other two young were sitting quietly on the nest ledge.

12th May saw the process of the brood leaving the nest completed. At 09.00 only one bird remained on the nest ledge: it was the least developed of the five and still showed a fair amount of down on the flanks. The other bird was sitting on a small and narrow ledge some 30 feet down the cliff, to which it must have flown either late on the previous night or early that morning. Until 11.20 it remained practically motionless on this ledge and then flew steadily across the gully to the headland that had been favoured by the second bird to leave the nest.

At 13.15 the last Raven of the five was still on the nest ledge and at 13.25 it called "eraak eraak"—something like the call of a Carrion Crow (*C. corone*). This was the first call heard from any of the young birds, but it evoked no immediate parental response that could be observed. At 14.20, however, the two parents flew round the bay of which the Ravens' cliff and gully form part, one crying "pruk pruk"; the young bird made no response, though at 14.40 it called "eraak eraak eraak" as one parent flew past. From 13.15 to 14.40 the young bird had done some preening and stretching but was not particularly active, and from 14.40 to about 15.00 it remained quite inactive. Thereafter, however, a period of great activity set in, consisting of preening, stretching, "eraaking" and hopping and jumping about, and culminating at 16.02 with the bird leaving its nest ledge without fuss or trouble and flying steadily to a sloping rock face containing the nests of Herring and Lesser Black-backed Gulls (*Larus argentatus* and *fuscus*). The gulls resented the presence of the intruder, but it showed no fear of them, remaining erect as they swooped over it except to duck when two came at it at once. It was found by a parent after perhaps one or two minutes—at least one had been in the vicinity all the afternoon.

From this time onwards it was rare to see all seven birds at once, though they were so seen at 11.00 on 13th May on the slopes of Purple Bay some 150 yards from the now deserted nest. At 15.45 on the same day six birds were seen here.

On the morning of 14th May four of the young and one adult were seen in the vicinity of the nest cliff, one of the young at a range of four feet for some time, when the bird betrayed, as did the other young when approached closely, some uneasiness but showed no great eagerness to fly. When they did so it was in a calm and unhurried manner. On one occasion this morning a young bird disturbed by me flew on to the nest ledge, but from the lack of any alteration in its general behaviour, the nest ledge now seemed to be of no special significance to it. In the afternoon of 14th May all five young birds were together on the south slope of Purple Bay when an adult appeared and fed one chick, followed

by the other adult with no food. This was the only feeding seen during the whole period.

By 15th May there was no sign of any Ravens near the nest or near Purple Bay but two young were seen some $\frac{3}{4}$ mile from the nest by the writer, and others in the same vicinity by other observers. By the following day Ravens were seen in various parts of the island and indeed it seemed that all ties with the nest and nest area had been severed and that the whole island was now their realm.

SUMMARY AND CONCLUSIONS

1. The parent Ravens appeared to take no part in encouraging the young to leave the nest but were generally at hand to accompany or defend the young bird at the time of its first flight.

2. The young birds were generally silent on the ledge and appeared not to be fed. Hunger may therefore encourage them to leave the nest ledge, and the one young bird that did call—the last to leave and probably, therefore, the longest starved—may have uttered a hunger call which, getting no response, further encouraged it to fly.

3. The birds flew, so far as could be seen, in order of development, but the last to fly was less developed when it flew than was the first.

4. The period between the first and last bird flying was some 48 to 53 hours, depending upon when exactly the first bird took wing.

5. Once away from the nest neither it nor the nest-ledge appeared to have any special significance for the birds, and the only one to return to it appeared to do so quite accidentally.

6. After the first flight the young birds still did not seem eager to take to the wing even on the close approach of a human being, but when they did do so, it was confidently and without panic.

7. After the young had left the nest, the area covered by the whole family rapidly grew, to extend, it seemed, all over the island within about three days. *

NOTES

Defence behaviour of a flock of Coot.—There are some references in *The Handbook* to the behaviour of flocks of Coot (*Fulica atra*) when attacked by birds of prey. On 11th January 1953, at Cannock Reservoir, Staffordshire, I witnessed the same behaviour when a Herring Gull (*Larus argentatus*) dived over a scattered flock of about 300 Coot. Those on the fringe of the flock flew a few yards low over the water, with much splashing, towards the centre, so that the birds formed a compact circular patch. After another swoop the Herring Gull flew off and the birds in the flock then gradually drifted apart to become once more a straggling group.

The throwing up of water which is referred to in *The Handbook* as an "active communal defence" appeared in this instance to be merely a consequence of the hurried flight of the outermost birds. As the birds never had to rise much above the water, the feet and wings automatically caused the splashing. J. LORD

Little Ringed Plover breeding in Cheshire.—On 23rd June 1954 I found 4 Little Ringed Plovers (*Charadrius dubius*) at a locality in central Cheshire adjacent to some shallow pools. The following day A. W. Boyd accompanied me to the place and we saw the 4 birds again. As they were observed simultaneously only in flight, we were not certain whether all the individuals were adults or whether any young birds were present. Those watched on the ground, however, were on each occasion adults.

A single bird was seen on 2nd July, after which date no further visits were made until 13th July when I found a bird sitting on a nest containing four eggs. The nest was situated within four feet of the water's edge and had not been in existence at the time of the earlier visits. Boyd saw the sitting bird on the next day and the eggs were still in the nest on the 18th, but no Little Ringed Plovers other than the sitting bird were seen. On 24th July, however, the eggs had gone and a thorough search of the area on this and the following day showed no sign of any adults or young birds.

In view of the lateness in the season when the eggs were laid it is possible that this was a second nest. It was noted that the water level rose considerably following periods of heavy rain and some suitable nesting areas were submerged, and this could easily have accounted for an earlier failure. The eggs from the nest that was found were, however, not lost in this way and an avian or rodent predator was suspected. This is the second recorded occurrence of the species in the county and the first attempt at breeding. E. L. ARNOLD

Little Ringed Plover breeding in Oxfordshire.—A pair of Little Ringed Plovers (*Charadrius dubius*) was seen close to an empty

nest-scraper on an islet in an Oxfordshire gravel pit on 19th May 1954. A single egg was found in a fresh scrape near-by on 23rd May. This nest was robbed; the next attempt was flooded, but a c/4 finally hatched in July, two or three young fledging successfully; individuals were seen at the pit till September. One or more other adults were present in May, but no other evidence of nesting was reported. This is the first occurrence and breeding record for Oxfordshire and full details will appear in the *Report of the Oxford Ornithological Society* for 1954. BRUCE CAMPBELL

[Now that the Little Ringed Plover is so well established in England, it does not seem necessary to publish a summary of all breeding records every year. We shall therefore in future publish each year, as has been done here for 1954, notes on breeding-records which represent the colonisation of new counties. Periodically, every three years if possible, we hope that Mr. E. R. Parrinder will prepare for us an analysis of all the breeding-records since the previous summary, as he recently did for the years 1951-53 (*antea*, vol. xlvii, pp. 198-203).—EDS.]

Snipe drumming regularly in November.—Between the 13th and 20th November 1954 I was shooting on the west coast of Schleswig-Holstein about 15 miles south of the Danish border, and on each of these days, except the 13th and the 20th, I heard Snipe (*Capella gallinago*) drumming. The birds were numerous and wild. On three of the days the ground was hard almost all the time from frosts of the previous nights. There was little wind and the weather was mostly fine. Apart from the drumming during the day, I also heard it after dark on one occasion; this was over the salt marshes during the evening flight, and the ground was frozen, there being 3°C. of frost HENRY FOSTER

Black-headed Gull alighting on the back of Tufted Duck.—The habit of the Black-headed Gull (*Larus ridibundus*) of attaching itself to various species of diving duck for the purpose of robbing them of food brought to the surface is well known, and has been discussed at length (*antea*, vol. xxxviii, pp. 12-15 and 57).

The general procedure adopted by the gulls to obtain food in this manner is to make a sudden attack on the duck immediately it surfaces in the hope that it will be induced to drop whatever it has brought up, which is then picked up by the gull. Actual snatching of food from the victim appears to be less common. It may therefore be worth placing on record that on 22nd November 1954, at a gravel pit near Radlett, Hertfordshire, I watched two gulls of this species attending a small flock of Tufted Duck (*Aythya fuligula*) in the manner described above. On one occasion, however, one of the gulls hovered above the spot where a duck had submerged, and immediately this bird surfaced near-by the gull alighted on its back, and maintaining its balance with open wings, snatched something from the duck's bill. BRYAN L. SAGE

Large autumn gathering of Black Terns inland in Somerset.—On 5th August 1954, at the Chew Valley Reservoir, Somerset, an unusually large party of 170 Black Terns (*Chlidonias niger*) was counted late in the evening. The terns were keeping mainly to the southern end of the reservoir where they were actively feeding and were apparently taking small insects off the surface of the water. It would appear that the gathering is one of the largest yet recorded for the species at any inland water in the British Isles.

P. J. CHADWICK and BERNARD KING

White-winged Black Tern in Devon.—On 9th May 1954 at 9 a.m. A. V. Smith and F.R.S. saw a party of 17 Black Terns (*Chlidonias niger*) on the Exe estuary above Powderham, Devon, and immediately noticed that one of them had white wings. On closer inspection this was found to be a White-winged Black Tern (*Ch. leucopterus*). The inner portions of the upper wings were white shading to grey at the tips. The tail and tail-coverts were white, and the under-wings black. The wing-beats were stronger than those of the Black Terns. The bird was watched for two hours, at rest, in flight, and feeding in a manner similar to the Black Terns by dipping to the surface. The whole party would occasionally rise to a considerable height and would break up into groups, but the white-winged bird could always be readily picked out.

During the afternoon of the same day, R.F.M. saw a small party of 4 Black Terns, and amongst them what was presumably the same White-winged Black Tern, on the Exe estuary just below Topsham. These terns were flying up and down feeding over an exposed mudbank, and at intervals would settle for a few minutes on the dead branches and weed-covered stones scattered about the bank. After watching them for some 20 minutes, R.F.M. was able to approach within 15 yards, and apart from the details given above was able to note that the legs were a vivid deep red, and that the bill appeared to be totally black. In comparison with the jet black parts of this bird, the accompanying Black Terns looked quite dingy, but they were, however, of very slender build and graceful flight.

During the evening of 10th May the bird was again seen by F.R.S., this time with P. J. Dare and T. J. Wallace: on this occasion it was accompanied by a small party of Common Terns (*Sterna hirundo*). It was still present at dusk, but was not seen again.

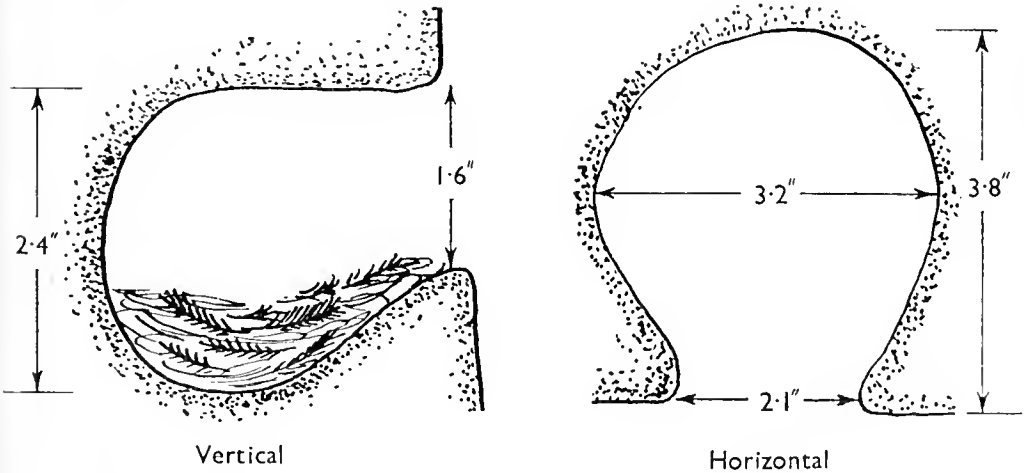
The only previous fully authenticated record of a White-winged Black Tern in Devon is that of 1870, when one was obtained at Ilfracombe. Three other supposed Devon specimens are inadequately labelled.

R. F. MOORE and F. R. SMITH

Dark-breasted Barn Owl in Norfolk.—On 10th November 1954 a Dark-breasted Barn Owl (*Tyto alba guttata*) was picked up dead

under some sheds at Horsey Hall in Norfolk. There had been a strong northerly gale blowing for several days and we presumed the bird was too weak on its arrival to hunt for food, and thus died from exhaustion. Mr. E. A. Ellis, at the Castle Museum, Norwich, to whom it was sent by Major Anthony Buxton, said that although its plumage was in good condition, very large numbers of feather-lice were present on the bird's head. G. CREES

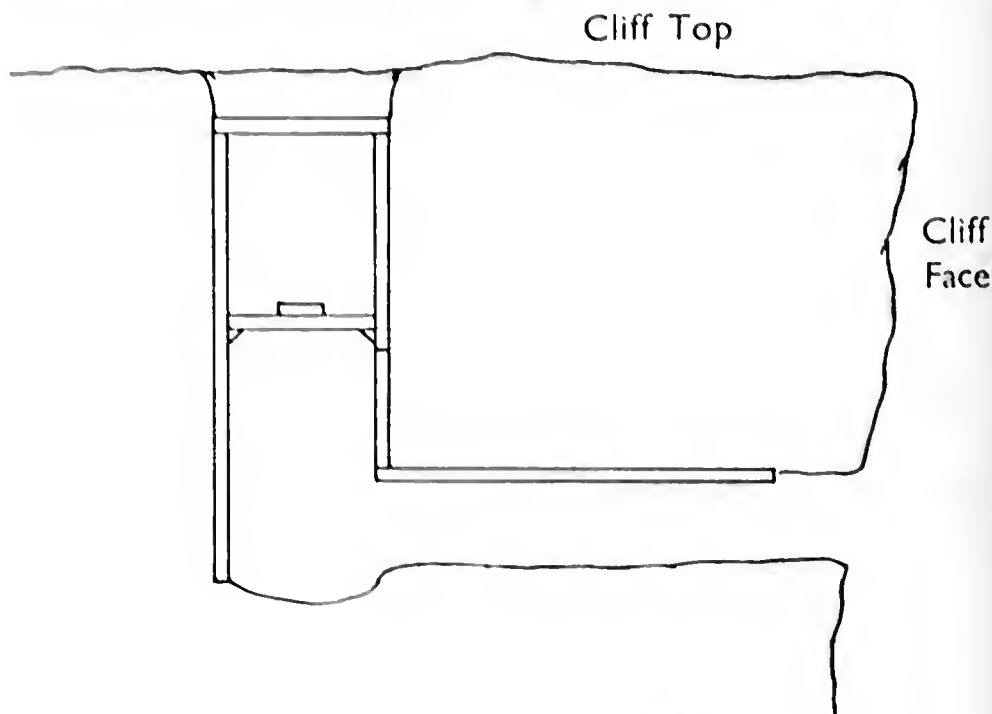
Unusually exposed Sand Martin's nest.—On 5th July 1954, while examining a colony of about 50 pairs of Sand Martins (*Riparia riparia*) breeding in a small gravel pit near Hertford, I discovered one nest with three young, which had been built in such a way that there was no tunnel and the nesting cavity was fully exposed. The accompanying diagrams give an indication of the size and shape of the cavity, but I should add that the hole was only 3.8 inches from the back to the front, and the entrance was 2.1 inches wide and 1.6 inches high, widening out into a cup 3.2 inches wide (maximum) and 2.4 inches high. The roof of the cavity was straight, and the floor dipped into a cup containing an untidy mass of grass and feathers.



CROSS-SECTIONS OF NEST OF SAND MARTIN (*Riparia riparia*): HERTFORD,
5TH JULY 1954
(Not to scale: all measurements given in inches)

I felt at the back of the nest to see if a stone or piece of rock had prevented the Sand Martin from tunnelling any further, but the sand was quite soft (the hole was tunnelled in a stratum of silver sand). I am quite certain that the hole had not been interfered with in any way by human beings. The measurements given were taken on a later visit, when the young had gone, but on the day that I found the nest, one of the adult birds fed the nestlings several times. This it did by clinging on the side of the hole, but very rarely went in. All the other nests in the colony were built with the normal tunnels. R. COOPER

Nest-boxes designed for Sand Martins.—In April 1953 we put down five nest-boxes for Sand Martins (*Riparia riparia*) in the top of a high sea-cliff in Hampshire. During the 1953 season nests were built in all five, and eggs were laid in four of them. Three broods were reared in one box. We consider that these boxes may provide a means of collecting breeding data about these birds, and with slight alterations they could probably be used for other species, such as Wheatears (*Enanthe enanthe*) and Pullins (*Fratercula arctica*), and so a description may be of value.



VERTICAL CROSS-SECTION OF NEST-BOX FOR SAND MARTINS (*Riparia riparia*)
(NOT TO SCALE)

The ground is prepared by the digging of a vertical shaft about 1 foot deep and of such dimensions to allow a wooden lining 6" square to be inserted. From the bottom of this shaft the tunnel is bored out to the cliff face, and it is lined with wood on the top and sides, so that the internal measurements are roughly 2" square. A false lid is inserted about 6" from the bottom of the wood-lined vertical shaft, i.e. just over the nesting chamber. A second turf-covered lid is used on top, and these together provide adequate protection and at the same time can easily be removed for inspection. The length of the horizontal passage does not appear to matter, and ours vary from over a foot to a few inches. The accompanying sketch showing a cross-section through the box will give some idea of the plan. It should be added that we tried this experiment in a place where there was a natural colony of some 12 pairs thirty yards away.

B. R. HENSON and J. D. JOHNSTON

Jays killing rabbits.—Mr. S. Roberts told me that at the end of July and in early August 1953 he had good evidence of Jays (*Garrulus glandarius*) killing small rabbits in the neighbourhood of Pant on the borders of Montgomeryshire and Shropshire. On two occasions, after hearing the squealing of the attacked rabbit, he was in time to see the end of the kill at close quarters. I know of no previous records of this kind, although Jays of course kill voles, mice and small birds.

J. H. OWEN

Jays and Carrion Crows recovering hidden food.—I was much interested in Mr. C. J. O. Harrison's note (*antea*, vol. xlvii, p. 406) on Jays recovering hidden food. In my paper (*Ibis*, 1951, vol. 93, pp. 602-625) on the behaviour of the Jay (*Garrulus glandarius*) I was only able to give a few certain records of such recovery. Since then I have, however, seen the recovery of hidden food on scores of occasions in Kensington Gardens, London, and about a dozen times by Jays in country districts, where, of course, such observations are more difficult to make. By "certain records" of recovery I mean those in which the Jay goes straight to a particular spot and digs up food or removes it from its hiding-place. In the case of acorns recoveries only from places to which fruits could not have been taken by wind or gravity are counted. Not only are buried acorns and chestnuts recovered in this manner, but the London Jays also habitually retrieve pieces of bread, cheese, meat, etc., from beneath loose bark on the under-side of branches (as well as elsewhere) whence recovery could not be due to visual clues. In a few instances I have seen recovery of food that I previously watched the bird hide, but these have been with Kensington Garden Jays and involved recovery of artificial food (meat and peanuts) given the day before.

When collecting food-samples from young Jays I carry whole-meal bread and cream cheese to feed it—well chewed up—to the birds in lieu of the meal taken from them. Once, in spring 1954, having a small piece of bread over I left it on the rim of the nest. About 28 hours later, when I again collected a food sample from the nestlings I found their meal had consisted of this bread, mixed with about the same bulk of insects. Obviously the bread had been hidden by the parents and used later when required. This pair also fed acorns to their young (mixed with insects) and in view of the difficulty (if not impossibility) of finding sound acorns in June it is fairly certain that this involved recovery of acorns previously hidden by them.

It by no means follows that acorns retrieved in spring have lain undisturbed since first collected and hidden in autumn. Jays often dig up hidden food only to hide it again elsewhere. Sometimes this is done because another bird is seen food-seeking in the immediate vicinity of the cache, sometimes for no apparent reason

other than the (presumed) satisfaction that such activity affords. Twice, however, I have seen a Jay retrieve an acorn with roots about two inches or more in length. Since the Jay almost always bites the growing root from such an acorn before attempting to eat or transport it, these acorns must have remained in the ground undisturbed for a considerable period.

Hidden acorns may also be recovered after prolonged searching, apparently on a trial and error basis. This may be due to "forgetfulness" or the terrain's having altered in appearance, but is, I think, more often a search for food hidden by the bird's mate or some other Jay. That the Jay fails to retrieve a great deal of hidden food is evident from the extent to which it spreads acorn-bearing trees (F. Turek, 1950, *Lesnická Práce*, vol. 29, pp. 385-396), although whether, or to what extent, forgetfulness is responsible for this is unknown. Captive jays (*G. lanceolatus* as well as the present species) spend much time diligently searching for "buried treasure" yet even then acorns may escape disinterment. One of my aviaries contains three baby oaks and two others have one each although at no time in the past five years have there been fewer than a pair of jays in any of them.

The Carrion Crow (*Corvus corone*), if offered food of a portable nature (such as lumps of bread), hides it as eagerly as the Jay and in a very systematic manner. Usually it first picks up one piece of bread, then puts it down again, brings a second piece to the first, continues this until it has as many pieces gathered as it can carry, then flies off with and hides them and returns for more. It is remarkable that it usually estimates correctly the amount of bread it will be able to pick up (often only with difficulty after several attempts) at once, and that it almost always brings other pieces back to the one first picked up, instead of carrying the first piece to the second and so on. Also it usually hides all the surplus food first and does not eat until the last load is ready for transportation. The eagerness with which it then feeds and the amount eaten often show that the bird must have been in a state of some hunger whilst engaged in its storing activities. If the bird's mate or, still more, if other Carrion Crows arrive on the scene, the above picture is considerably distorted and one has the amusing if unedifying spectacle of everybody trying to grab and hide as much as possible as quickly as possible. I have twice seen Carrion Crows retrieve hidden food (bread) in the manner described for the Jay and have no doubt that they regularly do so. E. Strauss (1938, *Zeitschr. f. Tierpsychol.*, vol. 2, pp. 172-197) records that a captive Hooded Crow (*C. cornix*) (I follow the British nomenclature for convenience and not from any conviction that the Carrion and Hooded Crows are specifically distinct) retrieved hidden food and did not search again in places from which it had already retrieved it.

The storing and recovery of food by birds is of great interest,

and certainly no instance of recovery should be thought unworthy of record. Marsh and Coal Tits (*Parus palustris* and *ater*) habitually hide food, but in Norway at any rate (S. Haftorn, 1954, *Det Kgl. Norske Videnskabers Selskabs Skrifter*, 1953, no. 4) would appear only to recover it by more or less random searching. The Magpie (*Pica pica*) and Nuthatch (*Sitta europaea*) also frequently hide food, but to what extent they recover it I am unable to say.

DEREK GOODWIN

Further notes on the recovery of acorns by Jays.—For the past few winters I have watched ground feeding Jays (*Garrulus glandarius*) at every opportunity and from these observations it is now possible to supplement certain information given in my previous paper on the subject of the collection and burial of acorns by that species (*antea*, vol. xlv, pp. 359-364).

During the winters of 1952-55 I have witnessed the recovery of very many buried acorns and I have tried to ascertain to what extent the Jay eats retrieved acorns during the winter months compared with other foods. Other foods are definitely taken, but I have not found it possible to give any reliable figures. However, it does appear that on certain days Jays feed on hidden acorns to a larger extent than others and there have been occasions when every ground-feeding bird watched has retrieved one, while other birds have been seen with acorns in their bills. On other days I have not witnessed any recoveries at all.

The majority of recoveries I have witnessed have been made by single birds, but on five occasions I have seen 3 or 4 Jays retrieve acorns within a radius of ten yards and I have often disturbed a small party of up to six, one or two of which have carried away acorns. From the observations I have made I think it can be said that during the winter the Jay does in fact regularly feed on acorns that have been buried the previous autumn.

It has not been possible to prove whether a Jay that recovers an acorn is always the bird that has buried it. On most occasions this seems likely for a bird will hop onto the ground, bound straight to a given spot, dig furiously with its bill, take out an acorn and fly away with it. This behaviour leads one to believe that when the bird first comes down there is a definite motive to recover a particular acorn. On some occasions, however, a bird will hop about in all directions before finally taking out an acorn. The reason for this behaviour is not clear and it is not possible to say whether a bird behaving in such fashion is having difficulty in finding a buried acorn or just finds one by accident. As most acorns are properly buried the latter explanation seems unlikely. The behaviour might be explained by the fact that the birds sometimes bury several acorns in different holes within a few feet of one another (all of which may not be recovered) and that the bird

“remembers” a burial area rather than a buried acorn; alternatively, first a burial area, then a buried acorn.

Unless a bird bounds straight to an acorn it is difficult to tell whether it is actually looking for an acorn or not, although when it is tentatively peeking about one can usually say with certainty that it is finding other food.

M. R. CHETLEBURGH

[We hope that others will be encouraged to make further observations on this very interesting subject, which is perhaps of some ecological importance in connection with the spreading of oak-trees. It seems particularly desirable that more evidence should be gathered of Jay-borne acorns giving rise to oak seedlings on open ground or under trees of other species, and at the same time there is need for fuller information on the methods and seasons of the recovery of acorns, as well as on the distances to which they are carried.—EDS.]

Display-flight of Dipper.—On 31st January 1954 near Sedburgh, Yorkshire, a pair of Dippers (*Cinclus cinclus*) was observed displaying by bobbing to each other and singing on the edge of a small stream. Suddenly they flew a short way down the stream and then rose to a very considerable height and flew round twice together in a wide arc which carried them 120 yards away from the stream at the furthest. They flew round in two complete circles, one bird ahead of the other, and the rear one singing continuously. One of them then completed two similar circuits alone, still singing. This display-flight differed from T. A. Coward's observation on which *The Handbook* information is based, in two respects: (a) Coward makes no mention of the female accompanying the male on his “long, high flight”; and (b) he states that the male uses the “zit-zit” call, but he does not mention the use of song. The song used in this case was the usual wren-like warble. C. MOODY

Unusual movement of Mistle Thrushes.—On 12th September 1954 I observed a movement of Mistle Thrushes (*Turdus viscivorus*) and as the numbers were unusually large it seems worth recording. At 1350 hours B.S.T., I was on the Guildford-Maidstone road and had stopped at Limpsfield Common, Surrey, when I noticed a steady east to west movement of these birds, which were flying fairly low at a height of about 20 to 30 feet and parallel to the road. The birds seemed rather tired, and were making heavy going of flying into a fairly strong west wind. Occasionally one of them would alight in a mountain ash tree and feed on the berries, which did not appear to be fully ripe. After watching them for ten minutes I decided to make a count for an hour, at the end of which time the total was over 280. I then had to leave, but returned at 1500 hours for a few minutes and again an hour later. On each occasion there were still a few. The greatest number of birds to

be seen at any one time was 7, but the passing of these small parties was quite continuous.

ERNEST E. HUNTLEY

Blackbird taking frog.—On 10th June 1953 I was surprised to see a Blackbird (*Turdus merula*) carrying a large frog in my garden at Birkenhead, Ches. The bird alighted, and proceeded to peck at the frog about the abdomen and legs. I rushed at the bird in an attempt to scare it off, so that I could examine the prey, but it flew off carrying the frog by one leg. I am aware that small frogs are known as prey of the Blackbird, but this was a full-sized specimen which must have measured at least 2 inches long in the body.

R. J. RAINES

Unusual nest-site of Redstart.—On 24th May 1953 a friend and I saw a female Redstart (*Phoenicurus phoenicurus*) go to a nest in the middle of a honeysuckle bush near Duns, Berwickshire. The bush was against and hanging from the trunk of a tree, the nest being about 2 feet away from the trunk among the tangled branches of the honeysuckle, about 4 feet from the ground. It contained 5 eggs. The nest consisted of an outer layer of bracken and an inner layer of moss, leaves and dry roots, lined with hair and a few feathers. It seemed very large for a Redstart's nest, and had an open cup. On 26th May Lt.-Col. W. M. Logan Home was present with me, and saw the female Redstart return to the nest. Unfortunately the eggs disappeared on the 28th May. W. MURRAY

Habits of the Grasshopper Warbler.—*The Handbook* mentions the reluctance to fly on the part of the Grasshopper Warbler (*Locustella naevia*) and that when driven the bird flits only a few yards before diving into cover. For a bird of such skulking habits it is perhaps worth recording how often they take wing in a place with so many ditches and so much cover as exists on Saltee, Co. Wexford. Often Grasshopper Warblers leave the ditches and cover as one passes, without making any disturbance. When ditches are beaten, the birds often fly an appreciable distance and frequently across open fields. On such occasions flight is direct, about two feet above the ground, with very fast beating wings. The short wings and contrastingly long tail are a noticeable feature in these flights.

ROBERT F. RUTTLEDGE

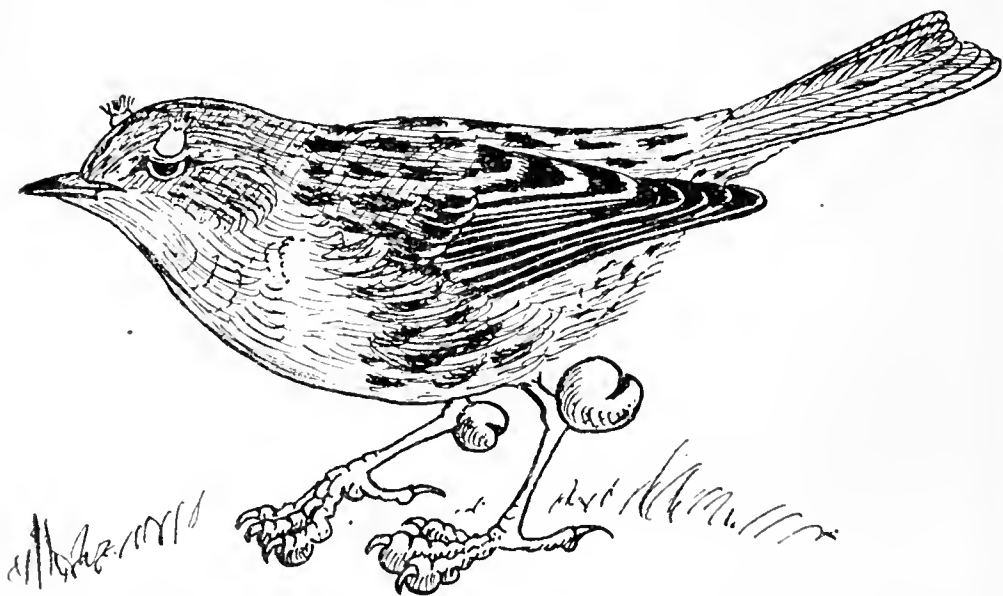
Association of Barred Warbler and Red-backed Shrike on passage.—In view of the known predilection of the Barred Warbler (*Sylvia nisoria*) to nest in proximity to the Red-backed Shrike (*Lanius collurio*) in North Germany and elsewhere on the Continent, it may be worth recording that in a large garden near Seahouses, Northumberland, where first-winter birds of both species were present on 22nd August 1954 and the following few days, on many occasions they were to be seen together in the same small poplar

tree, about 12ft. high, and sometimes sharing the same small branch. There was plenty of alternative accommodation. The association between these two birds would seem therefore to extend, sometimes at least, long beyond the nesting-season and to immature as well as to adult birds.

E. A. R. ENNION

Excrecences about the eyes and on the legs and feet of Dunnocks.—On 18th August 1949, at the High Royd trapping station, Halifax, Yorkshire, I trapped two Dunnocks (*Prunella modularis*) each bearing large swellings on feet, ankle joints and over the eyes as shown in the sketch. They were ringed BF.422 and BF.423 respectively. A third Dunnock was trapped on 19th August with growths over the eyes only, but these were so large that the bird was apparently only able to see with difficulty. This bird was ringed BF.428. A fourth Dunnock ringed F.3097 and trapped on 23rd August had only one growth on the left ankle joint. All four birds had badly swollen feet, and this condition applied to several more Dunnocks caught within a month of the above dates.

The eye growths were small cones, coloured bright yellow, and had tufts at their protruding ends. They were soft but could not be removed with the fingers. Leg growths were hard and round with a nick on the outer surface rather like that on a plum, and varied in size (see sketch). Swellings on the feet also varied in size and, although the affected birds walked without apparent discomfort, some of them found difficulty in perching.



DUNNOCK (*Prunella modularis*) WITH EXCRESCENCES OVER THE EYES AND ON THE LEGS AND FEET

HALIFAX, YORKSHIRE, AUGUST 1949

(Drawn by George R. Edwards)

We found no more affected birds after the end of September, but did not re-trap any of the ringed birds until BF. 422 was caught on 18th December 1949. Although this bird was the most severely inconvenienced of all the birds trapped (I hesitated about ringing it for some time) there was, when re-trapped, not the slightest trace of any growth and it appeared to be in perfect health.

No other species of birds caught at High Royd were affected in the same way as the Dunnocks.

GEORGE R. EDWARDS

[From time to time growths on the legs and feet of Dunnocks have been recorded in the literature, and some writers have stated that this species is more prone to disease than most others. However, the size of the excrescences and the number of birds involved in the present case seem remarkable. Dr. J. G. Harrison, after seeing the above account, said that "from the history of the disease and the picture it seems to have been some virus infection, probably closely allied to the human wart, but of course one of the nodules should have been sectioned." It is interesting that the infection should have involved so many birds for so short a period. In 1951/55 I have trapped Dunnocks in two small areas on 67 occasions, 51 individuals being involved, and each time the birds have been minutely examined. On 7 occasions swellings on the toes much like those in the sketch have been noted, and in 4 of these the ankle joints have been swollen as well; but there have been no excrescences on the legs or over the eyes of the kind recorded by Mr. Edwards.—I.J.F.-L.]

Richard's Pipit in Norfolk.—On 1st May 1954 large numbers of migrants arrived at Cromer, Norfolk, and among them was a bird which I identified as a Richard's Pipit (*Anthus richardi*). I approached to within 10 feet of the bird as it fed on top of the cliffs, and obtained good views of it for about an hour. Direct size comparison was possible with a Yellowhammer (*Emberiza citrinella*), and there were some Meadow Pipits (*A. pratensis*) only a little distance away. It was much larger than the latter, with much longer legs and a longer tail. The tail, in fact, seemed intermediate in length between a Meadow Pipit's and a Yellow Wagtail's (*Motacilla flava flavissima*). Its legs were pink in colour. It progressed in typical pipit fashion and flicked its tail constantly as it walked. Several times the bird stopped, raised its head and stretched itself into a very upright position.

Its general appearance was dark brown with pronounced black striations. Its breast was buffish, with bold streaks starting in a slight moustachial line and ending abruptly on the lower breast, leaving the rest of the under-parts a uniform creamy buff. Its flanks were slightly tinged with rufous and the tail was dark with white outer feathers. As it fed it constantly uttered a short "pip-

pip'' note, and on the one occasion on which it flew, it uttered a note similar to a Yellow Wagtail's, but longer and more harsh.

R. A. F. Cox

Grey Wagtail fishing.—On 5th September 1954, at a small disused gravel pit in the parish of Langford just inside the Oxfordshire boundary with Gloucestershire, I watched a ♀ (?) Grey Wagtail (*Motacilla cinerea*) feeding along the shore. Occasionally, the bird made a dart into the water after some small fish which I could trace by the ripples on the surface as they streaked away. She succeeded, however, in catching one which had been prevented from escaping by a log lying parallel to the shore, and, running out of the water with it, she threw it on to the ground where it lay wriggling. After a cursory glance at it she left it and continued along the waterside in search of small insects among the stones. Where there were fish near to the shore she made further attempts to catch them though on these occasions without success.

When she had gone about five yards her attention was again engaged by the small fish which, in its attempts to regain the water, took occasional springs into the air. The wagtail ran back and picked up the fish again. Again, however, her interest was not sufficiently stimulated and she dropped it. Moving off along the waterside she paid no further attention to the fish which I later examined and found to be a young three-spined stickleback about $1\frac{1}{2}$ inches long. *The Handbook* (vol. I, p. 224) records minnows as having been caught by this species but makes no reference to sticklebacks. It was interesting that having rejected one fish the bird should still attempt to catch more. BASIL HARLEY

[Records of Pied Wagtails (*M. alba yarrellii*) taking and eating fish-fry were published in *British Birds*, vol. xlv, pp. 69-70.—
EDS.]

Feeding habits of Starlings.—On 25th May 1954, at Birkenhead, Cheshire, I decided to find out what some Starlings (*Sturnus vulgaris*) feeding on the lawn were eating, and with a telescope (30X magnification) watched individual birds at 10 yards range. The birds were parting the short grass by gaping their bills, and as soon as one detected food, its beak was thrust into the soft soil and repeatedly opened, the bird itself often gyrating during this process. While I was watching, the prey was invariably a leather-jacket. These were grasped at one end, shaken until inactive (but not dead), and left on the grass. When four or five had been dealt with in this manner, the bird ran round collecting them all up and flew away with them held cross-wise in the bill. The period of absence from the lawn was three minutes each time. I identified the prey and its state of animation by frightening off

a bird before it was able to collect them, thus ending the period of observation.
R. J. RAINES

Tree Sparrow's nest built into occupied Buzzard's nest.—During the last two years I have twice found the nest of a pair of Tree Sparrows (*Passer montanus*) built into the base of the nest of a pair of Buzzards (*Buteo buteo*). The first of these was found on the 5th July 1953, on which day there were two young Buzzards over a month old, and in the Tree Sparrow's nest three chicks two or three days old—these later fledged successfully. On 1st July 1954, I found another nest in a very similar situation in the base of a Buzzard's nest containing a youngster of about one month old. There were four young in this Tree Sparrow's nest, which was made of dried grass and lined with feathers; that of the Buzzard being an old, enlarged crow's nest about 28 feet from the ground in a birch tree. This brood of Sparrows was not successful, the young being found dead in the nest on 4th July.

R. W. ROBSON

Variant leg colour of Moorhen.—With reference to previously published notes on Moorhens (*Gallinula chloropus*) with unusually coloured legs (*antea*, vol. xliii, p. 383; xliv, p. 140; xiv, p. 39) I wish to record having seen an adult bird with bright yellow legs but otherwise normal plumage, at Motley Hill, North Kent, on 24th May 1952.

PETER R. GRIFFITHS

Unusual injuries in Lapwing.—On 26th October 1954 a Lapwing (*Vauellus vanellus*) was found walking about in the Observatory garden at Monks' House, Northumberland (it could only have been there a few minutes), with the radio-ulnar section of the left wing wedged between the bases of the 4th and 5th primaries, which were sticking up over the bird's back: an arrangement similar to that produced in a trussed fowl. There was also a small wound below the right ear. The Lapwing may have crash-landed after collision with telegraph wires, a grass-stem or barbed-wire causing the punctured wound. The wing was carefully manipulated back into alignment, the bird kept overnight and given plenty of earthworms and released next morning, when it flew away strongly clean out of sight.

E. A. R. ENNION

LETTERS

THE ABERDEENSHIRE RECORD OF A WHITE-THROATED SPARROW

SIRS,—Commenting on the four British-taken examples of the White-throated Sparrow (*Zonotrichia albicollis*) in their excellent and timely paper "American land-birds in western Europe"

(*antea*, pp. 1-14), Messrs. W. B. Alexander and R. S. R. Fitter state: "All these have been written off as escaped cage-birds, but at least the last may reasonably be supposed to be a normal drift-migrant." This is the bird which occurred on the Flannans in May 1909.

They will be pleased to know that the first of the four birds can also make a strong bid for inclusion in this category. Going through the collection of skins kept in the Glasgow Museum and Art Gallery, Kelvingrove, on 9th February 1955, we came across a White-throated Sparrow bearing a label inscribed with the catalogue reference "80-122 iy" and the remark: "v. P. Glasgow Nat. Hist. Soc. Pt.i." Reference to the catalogue, which gave the provenance of the specimen as "New Broad Hill Aberdeen," and to *Proc. Nat. Hist. Soc. Glasgow* (1869), vol. i, pp. 209-211 (W. C. Angus, "Notice of the occurrence of the White-throated Sparrow in Aberdeenshire"), showed that this is the female bird which was shot by a Mr. Mitchell, on top of a furze-spray near the Broad Hill on the Links of Aberdeen on 17th August 1867. It was given by Mr. Mitchell to Mr. Angus, from whom it passed to Dr. Dewar of Glasgow, and later to Mr. A. B. Stewart, with whose collection it came to Glasgow Museum. The specimen does not bear the original label, and where these old skins are involved there is always the possibility of substitution having occurred, but we consider that in the present case this can be discounted. It is in freshly-moulted autumn plumage, as one would expect with a wild bird at this date, and even after 88 years in skin-cabinets shows not the slightest sign of abrasion, the tips and fringes of remiges and rectrices being perfect. The claws show no signs of wear. We do not believe that a bird in such an immaculate state of plumage can have been an escaped cage-bird as *The Handbook* (vol. I, p. 153) suggests was probably the case.

KENNETH WILLIAMSON and C. ERIC PALMAR

THE LEICESTERSHIRE RECORD OF A WILSON'S PHALAROPE

SIRS.—In your Editorial comment following the short paper on the Wilson's Phalarope (*Phalaropus tricolor*) in Fife in 1954 (*antea*, p. 17) you quote three previous reports of this species in the British Isles. One of these records is taken from Montagu Browne's *A History of the County of Leicester*.

However, the same author had this to say about the record when writing in his book *The Vertebrate Animals of Leicestershire and Rutland* (1886)—"Had Mr. Whitaker (the person who exhibited the specimen at the Zoological Society meeting in 1886) communicated with me, I might have saved him the trouble of putting up this ornithological skittle only to be knocked down promptly, for, as I saw it before he knew of its existence, I should

not have failed to secure it for the Leicester Museum if I had the *smallest* grain of faith in its being obtained locally. To relieve the historian of the future of any further anxiety, I may say that, being behind the scenes in this matter, I can emphatically state that Wilson's Phalarope *was not obtained in the county nor in Britain.*"

As the above was published eighteen years before his reference to the record in *A History of the County of Leicester*, Mr. Browne did not apparently relieve himself of much anxiety! HUGH DIXON

SISKINS AND TWITES IN NORTH WALES

SIRS,—I believe Mr. J. C. S. Ellis has also written to you to correct a slight misstatement in Mr. R. W. Hayman's note (*antea*, vol. xlvii, p. 446) on the Siskin (*Carduelis spinus*) in North Wales. Mr. Ellis was not with me when I saw a party of Siskins at Llan Ffestiniog in September 1946; my ambiguous use of the plural pronoun covered another companion, Mr. D. Emlyn Evans.

But Mr. Hayman's observation raises a point of some interest. When a cardueline finch, which normally feeds its young (with seeds) by regurgitation, is seen carrying insects, can it be presumed that it is feeding young by an alternative means? I am not an expert on the group and *The Handbook* is silent on the point.

And this raises a further point, also concerned with a North Wales record, that of the Twite (*Carduelis flavirostris*) reported on Tryfan, 7th August 1944 (*antea*, vol. xli, p. 181). The late H. M. Rogers pointed out to me that, though the field characters are correctly given, the bird was described as "carrying food in its beak" and the observer presumed that fledged young were in the neighbourhood. Do we know that Twites ever feed their young in this way? There is, as far as I know, only one other doubtful breeding record of this species in Wales. Also Tryfan is such a popular and accessible mountain that, if Twites inhabited it at all regularly, one would have thought other records would be forthcoming.

BRUCE CAMPBELL

SIRS,—I was interested to read R. W. Hayman's recent note on Siskins (*Carduelis spinus*) in North Wales (*antea*, vol. xlvii, p. 446), though I must correct a small error in it. I was not with Dr. Bruce Campbell when he saw a party of Siskins at Llan Ffestiniog in September 1946. My first record was the one previously published in *British Birds* (*antea*, vol. xxxviii, p. 319), and was made quite separately some distance away from that place.

Mr. Hayman's note prompts me to list my records of Siskins seen in the Lledr Valley during and since 1949—

1949, Sept. 20th: 15-20 all either females or juveniles in oaks and alders.

- 1951, Sept. 9th: 1 adult male in a roadside garden.
 1952, June 7th: 1 immature bird in an old Scots pine.
 1953, Sept. 13th: 1 adult male on a power cable with 2 or 3 more calling from a fir near-by.
 1954, June 10th: 1 adult male and 1 female around some old Scots pines and 3, apparently immatures, flying over-head uttering the typical note.
 1954, Sept. 18th: 1 female or immature high up in a Scots pine.

Although I have as yet no definite proof of nesting, these occurrences in a comparatively small area point, in my opinion, to the presence of breeding stock.

JOHN C. S. ELLIS

NOTICES AND REQUESTS

New Ornithological Appointments.—With the aid of a grant from the Nature Conservancy the Wildfowl Trust have appointed Dr. G. V. T. Matthews as Assistant Director (Research) from 1st May 1955. Dr. Matthews has hitherto been working at Cambridge on problems of bird navigation and orientation.

Under new arrangements which have recently come into force in Edinburgh Mr. George Waterston has taken up the appointment of Scottish Representative of the Royal Society for the Protection of Birds, with which he will combine the Secretaryship of the Scottish Ornithologists' Club. His address is c/o The National Trust for Scotland, 5 Charlotte Square, Edinburgh 2. Telephone Edinburgh 34411.

The Secretaries of State for Home Affairs and for Scotland have appointed Advisory Committees for England and Wales and for Scotland in accordance with the Protection of Birds Act 1954. Sir Landsborough Thomson is Chairman of the first, which includes among its members Mr. E. M. Nicholson, Mr. Peter Scott, Mr. H. N. Southern, Mr. James Fisher, Miss Phyllis Barclay-Smith, Mr. G. R. Mountfort and Mr. Philip Brown. The Earl of Dalhousie is Chairman of the Scottish Committee, which includes Mr. A. B. Duncan, Professor V. C. Wynne-Edwards, Professor M. F. M. Meiklejohn and Dr. J. W. Campbell.

Bombing of Shelducks on the Knechtsand.—When Heligoland was relinquished as a bombing range an alternative site was selected on the Knechtsand near Wilhelmshafen, after consultation with ornithologists who unfortunately were not then aware of the importance of these sand-banks for moulting Shelducks (*Tadorna tadorna*) from north-west European countries. During the summer of 1954 bombing operations involving exceptionally intense blast were carried out, and large numbers of Shelducks were afterwards found dead. The facts were laid before the Secretary of State for Air by Sir Norman Kinnear, Chairman of the British Section of the International Committee for Bird Preservation, and as a result a government assurance has been given against a recurrence.

The extent and effects of the mortality inflicted are uncertain. We would be glad to receive reports (supplementing those which are regularly obtained each July under the direction of Mr. R. A. H. Coombes) on any apparently significant changes in local breeding numbers, and also on definite instances where no change or an increase has occurred. It is already clear that numbers are still normal in at any rate some areas.



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BRITISH BIRDS

FURTHER NOTES ON THE SWIFT, 1944-1954

By A. S. CUTCLIFFE

I—INTRODUCTION

British Birds published in February 1951 some notes on the breeding-habits of a colony of Swifts (*Apus apus*) in the tower of SS. Philip and James Church, Ilfracombe, Devon (Cutcliffe, 1951). The notes were the result of observations which the writer made during the period 1944-1949.

The study has been continued and the purpose of the present paper is to bring the story up to the year 1954. Some 800 visits in all have been made to the nests during both the periods and many observations on the daily activities of the colony were made from my house, situated opposite the tower.

The long term observations have afforded the opportunity of reducing to a minimum the necessity of handling adults. Experience has shown that some of the Swifts are disturbed by being taken from their nests; consequently it is an easy matter to draw conclusions which, as the result of such disturbance, are false.

Each year has brought to light new facts or helped to clear up doubtful points; nevertheless, many problems still remain unsolved.

2—GENERAL BEHAVIOUR DURING BREEDING-SEASON

In my earlier paper I explained that the majority of the tower nests are situated on the east and west sides, under the eaves outside the tower masonry. A few are built between two wooden beams which form the wall-plate inside the tower and are reached by means of an opening about three inches wide running along the whole width of the north and south sides.

During the last few years I have constructed hand-made nests which have been placed in outside nesting-places on the east and west sides. Some of these have been occupied and, concurrently, a number of inside nests have been abandoned. Apparently the Swifts have a preference for the smaller-hole type of outside nests, in spite of the more limited space as compared with those situated inside. To facilitate this study all the nests have been numbered.

Records over the period under review have shown that the average annual date of arrival of the first Swift at Ilfracombe is 7th May. The pattern of arrival has been studied and shows that pairs of Swifts which have bred in the tower in previous years are among the first to arrive. These are often accompanied by "odd-number birds" which are new to the tower. Thus the first arrivals are in many cases small odd-number parties of three, five, seven and so on. In 1948 I started to ring both the adults and the young and, as a result of their subsequent behaviour (during mating for instance), I was able to establish that at least some of the odd-number Swifts were males which had attached themselves to two Swifts already paired. On several occasions two Swifts known to be already paired have been seen flying together in the vicinity of the tower, closely followed by an odd-number bird which appeared to be an ardent male trying to win over the female. Records show that success occasionally came the way of the pursuer.

As I shall be referring to "non-breeders" in quoting these and other records, it might be well to define what I mean by the term. Each year a small number of Swifts occupy some of the tower nests but do not lay eggs. They are believed to be one-year-old birds, born during the previous breeding-season and not yet ready to breed. As a rule they pair and occupy a nest, at intervals, for the rest of the season but show less attachment to the nests than do the breeding pairs. Often, as will be related later, they are absent from the tower for several days at a time. Several Swifts, first recorded in the tower as non-breeders, have returned the following year and bred. These supposed one-year-old birds, not yet ready to breed, will be referred to in the remainder of this paper as "non-breeders".

Two non-breeding Swifts, occupying No. 12 nest, were ringed in August 1948: D.5503, a female, and D.5504, a male. In 1949 they returned to No. 12 nest, two eggs being laid. In 1950 they again returned to No. 12 nest but later moved to No. 11 nest, where three eggs were laid.

In 1951 they were identified by their rings as being the first pair of Swifts to arrive at the tower, and they occupied No. 11 nest. Arriving with them was another Swift, an odd-number bird which occupied No. 4 nest. Together, the three made up the total number of Swifts at the tower until about a week later. By observing the birds as they left their respective nests, I noticed that during several days after arrival the pair flew together, with the odd-number bird in close pursuit. After about ten days, the female, D. 5503, was found sharing No. 4 nest with the unringed odd-number Swift and in due time two eggs were laid. The male, D.5504, continued alone in No. 11 nest for several nights and then shared the nest with an unringed Swift, presumably a female.

In 1952 the female, D.5503, was found in No. 4 nest with an

unringed Swift. As no eggs resulted from the partnership it is thought that the unringed bird was a male non-breeder unable to carry out the normal duties of partnership—surely a slip on the part of the female. On 24th July 1952 she was found on the floor of the bell-chamber. Her weight at that time was 44.83 grammes. On release she flew off successfully and has not since been recorded in the tower. The above odd-number bird is known to have been a male. It is suspected that females are also sometimes among the odd-number birds, though there is no evidence, as yet, to prove it.

It will be noted that many features of the breeding biology of the Swift are brought out in the history of this one pair: their first appearance as non-breeders; their simultaneous arrival at the tower in 1949 when the old nest was used (this was repeated in the following year); then the change of mate and nesting-site; the final return for the fourth time (which made five visits to the tower); and the probable pairing with a non-breeder in 1952. Note: The eggs laid were 0 — 2 — 3 — 2 — 0.

The meeting-place of those pairs of Swifts which arrive back at the old nesting-sites together has long puzzled observers. My records show that some breeding male birds have emigrated several days before the females, which are left alone to feed the young. And yet the pair have returned together to the tower in the following year.

Although Swifts on migration often travel in small parties, there is evidence that they are inclined to congregate in groups over places where food is plentiful, such as reservoirs, ponds, sewage farms and also over buildings.

An excellent example of the grouping of migrating Swifts occurred in May 1954. The period 8th-13th May was remarkable for the huge numbers of Diptera, including St. Mark's Fly, in the North Devon area. Many thousands of these flies were flying in the Ilfracombe district, with several groups of Swifts, numbering up to a hundred or more in some groups, feeding upon them. Quite the largest number of Swifts ever seen by the writer was recorded between these dates. It might well be that such gatherings of Swifts, migrating in a common direction, provide the opportunity for pairs of previous years to meet again, pair, and ultimately arrive together at the old nesting-sites.

In order to test the attachment of the Swift to its nesting-site the following experiments were made.

On 16th May 1954 a ringed pair of birds, removed from No. 10 nest at 22.00 hours* on the previous evening, was taken by car to Tolworth, Surrey, and released at 18.00. The pair, which had bred in the tower in 1953, had arrived at their old nest seven days before the experiment was made, but had not yet laid any eggs. On being released simultaneously from a window facing south, they circled towards the north and then flew off together in a north-

* G.M.T. is used throughout the paper.

westerly direction. The weather at Tolworth was cool and rainy with a fresh northerly wind. A phone message to the writer resulted in a special, but not continuous, watch being kept on No. 10 nest. At 20.00 hours on the day after their release, two Swifts were seen to enter No. 10 nest within a few minutes of each other. It was considered best not to disturb the birds that evening but a later check confirmed that the travellers had indeed returned to No. 10 nest. Two eggs were subsequently laid in this nest. Tolworth is situated 180 miles to the east of Ilfracombe "as the crow flies" on a route assumed to be off the track taken by Swifts migrating up from the south west on their return from winter quarters in Africa.

In another experiment a pair of ringed Swifts was taken by car to Pinhoe, Exeter, about 45 miles south of Ilfracombe. Released from a window facing south they, too, circled and then flew together on a northerly course towards North Devon. Together they returned to their nest, which contained two young, in 1 hour 38 minutes.

The (at least) 180 miles return flight from Tolworth to Ilfracombe, involving an overnight flight, is of special interest when considered in relation to the mid-season flights of Swifts. These flights sometimes involve large numbers of Swifts during the period when breeding is in full swing. Their nature and composition is a topic of some discussion amongst ornithologists. I therefore offer some records regarding the tower birds which might have a bearing on the matter and be helpful to the discussion.

An examination of the composition of the Swifts making up the tower colony, in an average year, shows that a part of the colony is without any nesting responsibilities and so would be likely individuals to take part in such flights. For example, in 1954 seven pairs of adults laid eggs in the tower nests, so that fourteen adults were engaged in breeding activities. But the highest number of adults found in the nests at any time was on 2nd July, when twenty-five birds were present. This shows that eleven adults were not engaged in nesting, and these will henceforward be referred to as "surplus Swifts". A pair of the breeding birds already mentioned had, in fact, lost their eggs before 2nd July and these too can be regarded as being surplus Swifts after that date.

On numerous occasions a part of the tower colony has been recorded as being absent from the tower for about three or four days. The non-breeders are noticeably among those absent, but sometimes a member of a breeding pair will be absent too.

Here I will draw attention to the major difficulty experienced by Swifts in obtaining sufficient insect food during spells of bad weather. The difficulty is aggravated when the colony is situated on the coast. For example, a circle with a diameter of twenty-five miles, having Ilfracombe as its centre, shows that 60% of the area covered consists of the sea—a non-productive area as far as food

is concerned. The prevailing westerly winds are also off the sea and unhelpful to the birds. During the periods of light to moderate westerly winds the tower birds are inclined to leave the immediate coastal area for the more sheltered places nearby. After feeding in sheltered valleys, the colony returns to the tower for the night. These local feeding flights are normal during ordinary weather.

3—BAD-WEATHER MOVEMENTS

When strong westerly winds prevail over a couple of days or so, the number of Swifts to be seen in the local valleys is small and there is evidence that these are likely to be breeding Swifts which return to the tower from time to time, particularly at night. The surplus Swifts, however, with little attachment to the nests, remain away from the tower until an improvement in the weather occurs, perhaps for three to four days or even longer. Should bad weather become widespread and of long duration, *all* the Swifts forming the colony gradually drift back to the tower, singly as a rule.

It would seem that the shorter feeding-flights, in which all the colony takes part, may develop into the longer or mid-season flights (confined chiefly to surplus Swifts) as the result of worsening weather conditions near the breeding-site. The prime motive of both types of flight is surely the search for food and it is probable that great distances are covered during the extended mid-season flights.

An article by H. G. Hurrell published in the *Western Morning News* on 23rd August 1954 gives an interesting account of observations made at Slapton Ley, South Devon, where there is a large fresh-water lagoon and reed-bed. During the period 16th-18th June 1954 Swifts were seen arriving during the morning at the rate of seventy an hour at the Ley, where they fed eagerly. Later they worked their way up the valleys.

In my diary covering the period 13th-19th June 1954, the largest number of Swifts recorded in or around the St. James Church tower was five; the usual number is about eighteen. On 19th June I wrote: "Believe that a part of the colony is engaged in one of the mid-season flights". By the following evening, 20th June, the normal number of Swifts was back at the tower. Did the Slapton Swifts noted from 16th-18th June include some of the tower birds? I think it possible.

4—BEHAVIOUR IN FINE WEATHER

In contrast to the flights during bad weather, the behaviour of the colony during fine weather is a much happier affair. The birds can be seen flying and feeding in the vicinity of the tower from soon after daybreak up to about 08.00 hours. Many can be seen hawking over the grass at Capstone Hill, about 200 yards from the tower. Then they disperse in small groups and feed in the valleys near the town. During the early evening they return to the vicinity

of the Church and, by about 20.00 the well-known evening flights, which I call "fun and games", are in full swing. Screaming groups of Swifts, in appearance like "flying anchors", hurtle around the tower. Often a group will fly up to within a few inches of the entrance to the nests, or, in succession, land for a moment on the masonry of the tower.

It is at these times, in particular, that simulated coition can be seen. A close watch over several years leaves me unconvinced that successful coition takes place during flight. This doubt is reinforced by the many late dates when the action has been recorded. In 1954, for instance, simulated coition was noted on 4th August. Successful coition in the nest, however, has been seen during May and early June on several occasions, usually between the hours of 08.00 and 10.00.

As darkness approaches, the Swifts begin to enter their nests, some leaving soon afterwards for another short flight before final entry for the night. This is particularly noticeable if the weather is very fine and food is very plentiful.

During the early years of this study it became clear that a fine evening was sometimes an inducement to a part of the colony to spend the night "out-of-doors". Visits to the nests around midnight proved that the absentees were usually the non-breeders, but after the young were about a fortnight old, the male of a breeding pair, or even both parents, would be occasionally absent too. On such occasions, I have seen small numbers of the tower birds fly off at dusk towards the high ground which almost surrounds the town, some towards Exmoor, which rises to over 1,000 feet about five miles to the east of Ilfracombe.

I wondered just what happened to these birds during the night and whether the hours of darkness were spent in flight. The several Swifts which I have put out of the tower after dark have always returned safely to their nests the following day. The answer to the question, as far as I am concerned, came at about 23.15 on the night of 27th/28th June 1951 when I heard, and then saw, a small number of Swifts flying low over Capstone Hill, about 200 yards from the tower. It was a fine but rather dark night. About a month later, at 23.30, well after dark, I saw a few Swifts flying through the searchlight beams of a warship anchored off the town. Some of the birds absent at night were found to have returned to the tower early next morning.

The tendency for the birds to remain in the vicinity of the tower during fine weather must be considered against the considerable evidence of mid-season flights recorded under what appears to be ideal weather conditions. I have several records of groups of from 30 to 60 Swifts in the Ilfracombe district, during fine weather periods, which appear to be strangers to the district, as well as additional to the normal population.

My experience of the absence of a part of the tower population

during bad weather leads me to think it possible that the strangers, present in the Ilfracombe district during fine weather, may have started their flights from bad weather areas, in some cases, perhaps, from the Continent.

5—RINGING AND RECOVERIES

In 1948 I started to ring both the adult and young Swifts, and by 1954 had marked a total of 122 birds including 39 nestlings. It is worth noting that, although 19 individuals ringed as adults or non-breeders returned to the tower in subsequent seasons, there is no record of one of the ringed nestlings returning. In fact, only one nestling has been recovered. This was E.7139, ringed 19th July 1950, which was found dead at Chittlehampton, N. Devon, 14 miles S.W. of Ilfracombe, on 1st June 1953. At the time of its recovery, it was the first instance of a nestling, ringed in this country, being recovered in this country.

6—1954, A DISASTROUS BREEDING-SEASON

The year 1954 will long be remembered for its consistently unfavourable weather. Except for April and a part of May the summer was marked by a series of cloudy, coolish weeks of westerly winds and of much rain. An occasional short spell of good weather brought some insect food, but it became clear that the colony was finding conditions very difficult. Some of the birds got rid of part, or the whole, of their clutch of eggs. A clutch of three eggs in an inside nest was reduced to two when one of the eggs was found lying about three feet out of the nest. A piece of wood $\frac{3}{4}$ of an inch high, which was in position between the nest and the egg, made it clear that the egg, in some way, was lifted to where it was found—it could not have been rolled.

By 18th June the first nestling had died and by 17th July all the nestlings had died in turn. Not a single tower nestling survived the weather of 1954. The condition of the nestlings during the periods of starvation provided an interesting example of the state of torpor described by Koskimies (1950). At 17.00 on 15th July I found two nestlings which had every appearance of being dead. They were lying stiff and inert at the bottom of the nest and, when moved, their stiffened legs remained fixed at an angle to the body. I wrote them off as being further casualties. Imagine my surprise on finding them very much alive when I examined the nest at 21.00 on the following day! On removing the glass covering the nest, the "dead" nestlings raised their heads in vigorous food-begging attitudes, but the return to activity was short-lived. The several periods of starvation had reduced the birds to near the limit of survival. On the next day, 17th July, they were found dead on the roof below the nest.

In an earlier season I had experienced an incident which possibly explains the fall of the nestlings from the nest. Two nestlings

from an inside nest were seen to *leave the nest* on the approach of one of the adults. It was during a period of bad weather and the nestlings were in a starved condition. The stronger bird secured all the food, and the weaker was not fed. On the following day the unfed nestling was dead in the position it had reached the previous day. The other nestling was back in the nest, from which it eventually flew. I think it probable that the nestlings found dead on the roof fell from their nest under similar circumstances.

After the death of the last of the nestlings, I examined four adults and found them to be in a much weakened condition. Normally, a Swift will cling to one's hand so strongly that it is common for the claws to penetrate the skin and draw blood. The adults I examined lay limply in my hand, almost incapable of movement.

With no further nesting responsibilities after 17th July, I rather expected the adults to make an early emigration, perhaps after a short period of feeding up before starting off. In normal years it is usual for the adults to leave in late July or early August, a day or so after the departure of their young. The weather, however, continued unfavourable for the Swifts and, in fact, had been 10° below average in temperature for the 36 days prior to 20th July. On 21st July better weather set in (Temp. 62° F., Bar. 30.20") and on the following day the first "marriage flights" of the ants were observed, many of the insects falling victims to the Swifts.

On 22nd July at 17.00 about 60 Swifts were flying over the tower and many later flew to the south-west, the first example of emigration in 1954. A few of the non-breeding tower birds left on this date. At 11.30 on the following day about 200 Swifts were seen flying west against a moderate south-west wind near Ilfracombe. Emigration was evidently in progress, but the tower adults did not join the passing migrants. From 7th to 12th August was again bad, but on the 13th a very fine spell of weather set in. On the 14th the Television weather chart was described as being "the most promising for the summer" (Temp. 61° F., Bar. 29.75", with a light S.W. wind). During the period 13th-14th August, all the tower adults left on emigration—27 days after the death of the last nestling—no further Swifts were seen there.

7—NOTES ON PARASITES

Breeding Swifts are hosts to a number of parasites and prominent among these is the two-winged, blood-sucking fly *Crataerina pallida* (Latr.). A number of these creatures are to be found in the nests and on both nestlings and adults, from four to seven being commonly found on an individual bird. All the adults examined on *first arrival* at the tower, however, have been free of *C. pallida*.

I am much indebted to Gordon B. Thompson of Cambridge for his information about the parasites of the Swifts, for examining and reporting on the contents of nests submitted by me and for his assistance in other ways. The following is based on my own

observations at the tower, supplemented by information supplied by Mr. Thompson.

The flies have developed an extremely efficient method of moving among feathers, darting about at remarkable speed. The wings are much reduced and the creatures cannot fly. Their legs are large, muscular and armed with toothed claws. The usual hazards of a parasite's life make special precautions necessary. Instead of laying numbers of eggs, only one young is produced at a time and this is hatched within the body of the fly, the larva being fed by a milky secretion from the mother. It is deposited in the nest as a fully grown larva which almost immediately pupates. The pupa overwinters in the nest and hatches on the return of the Swift in the following year. The fly usually appears in the nests in early June, about seven to ten days after the Swifts settle down to brood the eggs. The known habit of some Swifts of changing from one nest to another is responsible, in part, for the spread of the pest, as is also the way in which the creatures wander to considerable distances from a particular nest. Some nests made by me and placed in positions clear of pests have become infested within a few weeks.

Other pests also find a home in the nests or on the bodies of the Swifts. A nest collected immediately after the young had flown and submitted for examination to the British Museum (Natural History), contained the following fauna:— several hippoboscids flies (Diptera) *Crataerina pallida*, (Latr.); 1 beetle (Coleoptera), *Tachyporus lypnosum*; several Lepidoptera larvac; several mites belonging to two species, *Nothrus sylvestris* (Nic) (Fam. Orebatidae) which feeds on moss, and *Dermanyssus gallinae* Deg. (Fam. Dermanyssidae), the common "red mite of birds".

At the end of the 1953 breeding-season I sent three nests to Mr. Thompson who kindly examined them for pests with the following results.

- (1) Nest collected 10.8.53 and sent 13.8.53.
C. pallida: 1 living adult; 16 living puparia; 62 empty puparia.
- (2) Nest collected 6.9.53 and sent 9.9.53.
C. pallida: 9 living puparia; 156 empty puparia.
- (3) Nest made by A.S.C. and placed in a position isolated from sites hitherto used by nesting Swifts. Placed in position 1.4.53, collected and sent 9.9.53.
C. pallida: 4 empty puparia.

Nests (1) and (2) contained considerable numbers of *Attagenus pellio* (L.) (the Fur-Beetle), and a few larvae of *Borkhausenia pseudopretella* (Staint) (the Brown House Moth).

It will be appreciated that the numerous pests to which the Swift is host can be the source of considerable irritation to the birds, indeed, this is clearly apparent by the constant scratching of both nesting adults and nestlings.

In size the fly *C. pallida* is about a quarter of an inch in length, which is large when compared with the size of its host. The presence of a number of these parasites creeping about in the feathers of its host has been compared to a man with a number of shore crabs scuttling about in his underclothes. Having on one occasion found three of the creatures inside my own clothing, after handling nesting Swifts, I am in full agreement with the comparison.

The following notes, based on observations made in 1952, will give a picture of the relationship of parasites to the nesting Swifts during an ordinary breeding season.

In 1952 the first adult Swifts (three) arrived at the nesting-sites on 28th April and by the middle of May about twenty-two adults were using the nests. An examination of twelve adults on 2nd June, in their several nests, revealed that three or four *C. pallida* were in each one of the nests and that from four to seven were on each bird. Compared with other years, the numbers of parasites seemed large for so early in the breeding-season. The weather was fine and warm at the time.

A further examination was carried out on 12th June. Two eggs from one nest and three eggs from another had been thrown out by the adult birds. The three eggs were lying on a roof about 20 feet below the nest and a single specimen of *C. pallida* was noted beside them. About a fortnight later, two young birds were found dead in another nest with a couple of *C. pallida* crawling over the bodies. In another fly-infested nest two young birds died and in yet another nest, two of the three young died. All the nests occupied by adults during the 1952 season contained *C. pallida*.

A House Sparrow's (*Passer domesticus*) nest (in which two broods were raised), built between two Swifts' nests, contained no *C. pallida*.

On the observations over the period 1944-1949 the following facts emerge. The total number of eggs laid by the tower Swifts was 58; of these 15 were ejected, 7 failed to hatch and 36 hatched out. Of the 36 nestlings, 5 died in the nest and 31 flew successfully, this latter figure representing approximately 53% of the total of eggs laid and 86% of the eggs hatched. It may be that some of the ejected eggs are accidentally thrown out of the nests by the birds in their efforts to rid themselves of the flies. According to Kemper (1951), the flies have been observed sucking blood from seven to fifteen minutes and the period between feeds is about four to five days. The effect of the continuous feeding of a number of flies must result in a weakening of the young and adults, and during periods of starvation must contribute to the number of deaths. I do *not* believe that the activities of the parasites *alone* are responsible for the deaths of the Swifts.

With the departure of the Swifts at the end of the breeding season, the food of *C. pallida* is, of course, completely cut off.

Wondering how the parasites ended their lives, I searched the vicinity of the nests, where I found that a number of *C. pallida* had fallen victims to a species of spider which spins its web in positions of semi-darkness near the nests. One of the webs contained the bodies of seven dead parasites.

One of the spiders sent to the British Museum (Natural History), was identified as a female of *Teutana grossa* (Fam. Theridiidæ). This species, which is rather rare, is associated with buildings in the south and south-west of Britain. It has a distribution in countries warmer than our own, where it is found in the open.

ACKNOWLEDGEMENTS

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REFERENCES

- CUTCLIFFE, A. S. (1951): "Notes on the breeding habits of the Swift", *Brit. Birds*, xliv: 47-56.
- KEMPER, H. (1951): "Beobachtungen an *Crataerina pallida*, Latr., und *Melophagus ovinus*, L. (Diptera, Pupipara)." *Zeitsch. Lyg. Zool.*, 8-9: 225-259, 10 text—figs.
- KOSKIMIES, J. (1950): "The life of the Swift, *Micropus apus* (L)". *Ann. Acad. Sci. Fenn. A.*, iv: 151.
- THOMPSON, G. B. (1953): "The parasites of British birds and mammals—xxv." *Entomol. Monthly Mag.*, lxxxix:

MYRTLE WARBLER IN DEVON:

A NEW BRITISH BIRD

By F. RAYMOND SMITH

ON 4th January 1955 a blizzard swept over southern England and covered the Exeter area of Devon with three inches of snow. At the School House, Newton St. Cyres, four miles from Exeter, Mrs. D. Cook placed food on her bird-table for the benefit of the Blue Tits (*Parus caeruleus*) and other birds which regularly visited the table. She recollects hearing an unusual bird-note on the afternoon of this date. On 5th January her son, David Cook, noticed on the table a strange bird which he was unable to identify. This bird frequently gave the call note which Mrs. Cook recollects having heard the previous day. On 8th January David's father, Dr. D. Cook, rang me up to say that his son had drawn his attention to this bird and I asked him for a more detailed description. On 11th January he again telephoned and gave me further details; as a result, accompanied by my son, A. V. Smith, I went to see the bird.

It was visiting the bird-table regularly and could be watched without glasses at distances down to less than three feet as the table was touching the wall immediately beneath the dining-room window. It was at once apparent to us that the bird was of an unfamiliar species as it had areas of bright lemon yellow on each side of the body as well as a bright yellow rump and crown, while the fanned tail showed considerable areas of white. It was thought possible that it might be an American warbler. Full details were therefore taken and sketches made and, later the same day, my son and I paid a visit to the Royal Albert Memorial Museum, Exeter, where through the kindness of Major A. B. Gay ready access was given to the excellent collection of skins of American warblers and also to a copy of Audubon's *Birds of America*. By means of the coloured plates in the latter it was possible to identify the bird as a Myrtle Warbler (*Dendroica coronata*). The identification was afterwards confirmed by examination of the fourteen skins of this species in the collection and from these it was possible to pick out a male bird in winter plumage which was almost identical with the live bird feeding at the table four miles away. The following details had been taken of the bird in bright sunshine.

General impression.

Size appreciably more than a Blue Tit and rather less than a House Sparrow (*Passer domesticus*) also present; estimated to be $5\frac{1}{2}$ to $5\frac{1}{2}$ inches in length. General appearance a large warbler with pale under-parts and brown upper-parts, lemon yellow sides of body, and yellow rump visible in flight at a considerable distance.

Head.

Crown dull brown with an area of lemon yellow in the centre which the bird

appeared to disclose when in pursuit of the tits and which at other times was almost invisible. Nape and cheeks a dull mouse-brown; white rims above and below the eye, the upper one being continued as a pale buff stripe for a short distance behind the eye; the area behind the bill and below the eye blackish merging gradually into the brown cheeks.

Upper-parts.

Mantle and back dull brown, the back being streaked with darker brown in four roughly parallel lines; rump a very distinctive lemon yellow edged with black on each side; upper tail-coverts brown. The yellow rump was normally concealed by the folded wings when the bird was at rest, but showed up prominently when the bird took flight.

Wings.

Primaries black, showing bluish in good light, with very narrow pale edgings; secondaries blackish with pale edgings and a bluish tinge; greater wing-coverts similar but tipped with white or buff thus forming a wing-bar shading from white at the front to buff towards the back; a similar wing-bar was formed by the tips of the median wing-coverts which were otherwise brown; the lesser wing-coverts were brown speckled with bluish-grey spots forming a shoulder patch.

Tail.

When closed, the tail was blackish showing a bluish tinge; when it was spread as the bird took flight, a large triangular area of white could be seen at the base on each side, and this was found to consist of a large oval of white on the inner web of each outer tail-feather, together with a smaller area on the second feather and a very small area on the third feather on each side; these feathers were tipped with black.

Under-parts.

Chin and upper throat were white merging into dull white of lower throat and breast, streaks of dusky colour were visible on the upper breast; on each side of the breast was quite a large area of lemon yellow a portion of which was visible when the wing was closed; the remainder of the under-parts were dull white streaked with dark brown forming an irregular line on each side with a number of less obvious streaks below; the under-tail coverts were off-white.

Soft parts.

Bill, legs and feet black and glossy, the bill being of a warbler type but rather deep at the base; the eye was dark and large.

On arrival in the area the Myrtle Warbler had established a defined territory based on the bird-table from which it ranged for distances of up to about twenty-five yards in very swift flight, returning immediately if any Blue Tits ventured down to the table, driving them away unmercifully; in fact, on 11th January it was seen to pull out a small feather from one, and on two other occasions actually to bear one to the ground. It took no interest in the several House Sparrows (*Passer domesticus*) and only occasionally in the local Robins (*Erithacus rubecula*), but at different times it was seen by David Cook and others to chase away Great Tits (*Parus major*), Dunnocks (*Prunella modularis*), Chaffinches (*Fringilla coelebs*) and also a Bullfinch (*Pyrrhula nesa*) and a Pied Wagtail (*Motacilla alba*).

I again watched the bird on 12th January, this time being accompanied by R. F. Moore. On 13th January a further fall of snow to a depth of four inches took place, but Mrs. Cook was at pains to keep the bird-table clear of snow and to put out food in

order to encourage the bird to stay. It was on this day that Mrs. Cook placed on the table a piece of bread and butter on which marmalade was spread; to her astonishment the Myrtle Warbler immediately took to the marmalade which it frequently sipped off the bread by bending down its head sideways; this affinity for marmalade persisted throughout its stay but to a diminishing extent, as with the onset of milder weather it began to obtain most of its food in a more natural manner from the ground while later still it spent a lot of time at a compost heap. At other times it was also seen to eat suet and the fat from bacon-rind and on one occasion to take a small white moth.

At first the bird showed considerable yellow on the crown, but on 11th and 12th January it was noticed that it could control the brown feathers of the crown, covering the yellow when at rest or feeding and exposing it in variable amounts when chasing the Blue Tits or when otherwise on the alert. On 15th January when the Myrtle Warbler was watched by P. A. D. Hollom, I. J. Ferguson-Lees, R. G. Adams and myself during wet weather, the yellow on the crown was completely exposed until the head began to dry off and it was apparent that the brown feathers were flattened aside in the open position by the moisture. On this date far more dark streaking was apparent on the breast no doubt due to a similar displacement of the feathers when wet.

It was noticed that the bird assumed a plumpish appearance when at rest, but when on the alert it appeared slender and these two postures are well illustrated in the excellent photographs taken by E. H. Ware (plates 25-28). A short length of colour film was also taken by H. G. Hurrell. In dry weather the bird was seen by many observers to take insects in the air after the manner of a flycatcher, returning to the same perch or near-by. The bird was always easily located as it frequently uttered a distinctive clear "chick" and this note was recorded by C. Roekett on a portable recorder. When in the vicinity of the table the Myrtle Warbler frequently held its wings partially spread probably in threat display towards the Blue Tits and when it took flight it immediately fanned the tail exposing the two triangular areas of white to the full. On 16th January it was seen two or three times to flatten itself into a horizontal straight line and to bob its head up and down for about 15 seconds.

As time progressed the bird extended its range up to about fifty yards from the table and David Cook was able to watch the bird go to roost, usually in a small holly tree about eighty yards away; here again it was seen to chase the Blue Tits out of the same tree before retiring to roost.

Although the bird latterly reduced its visits to the bird-table it always regularly paid a visit in the early morning. On 10th February when it paid this visit David noticed that it looked a little "off colour" and later in the morning it was noticed that the

Blue Tits were visiting the table in force without molestation giving rise to the impression that the bird had gone. A search in the garden in the afternoon revealed the Myrtle Warbler lying dead underneath a tree only a few yards from the bird-table. The bird was outwardly in perfect condition and had clearly met its death from some internal cause and not from external injury. It was skinned and set up and is now on view at the Royal Albert Memorial Museum, Exeter. An examination of the body after skinning by Prof. L. A. Harvey disclosed no apparent cause of death. There had been ten degrees of air frost on the previous night after a mild spell and it may well be that death was due to a combination of some diet deficiency due to the bird being out of its normal element followed by a lowered resistance to withstand the sudden recurrence of a sharp frost.

It is of interest to note that a detailed description of the bird taken by C. H. Fry on 5th February disclosed more grey-blue colour on the lower back, tail-coverts and median and lesser coverts than was visible in early January; furthermore, an examination of the bird after death disclosed that this blue-grey then extended from the lesser coverts down to the rump and it is therefore evident that it was in the process of changing into summer plumage at the time of its death.

It was noted that the outer toe of the left foot was missing, but this injury did not appear to be of recent origin. It could also be seen that the bluish tinge of the wings was mainly due to a shade of blue-grey in the pale edgings.

One possible explanation of the intense antipathy of the Myrtle Warbler to the resident Blue Tits may be that a colour reaction was set up by the blues and yellows being of similar shades to those of male Myrtle Warblers in full plumage.

It seems certain that the arrival of the bird at Newton St. Cyres was brought about by the spreading of snow conditions to southern England and that it had in all probability arrived in this country some time before, when conditions existed which were suitable for a transatlantic crossing. Mrs. Cook lost count of the number of observers who watched the bird but at least sixty must have seen it, many of whom travelled considerable distances. On behalf of all these I should like to express our gratitude to Mrs. Cook for her kindness in welcoming all and installing them in her warm dining-room where they watched the bird in comfort for many hours.

[In connection with this record it is of interest to note that we have had preliminary reports of what seems to have been an American Robin (*Turdus migratorius*) near Tralee, Co. Kerry, on 11th and 13th January 1955; also Messrs. J. Kist and J. Swaab inform us that an adult male American Scoter (*Melanitta nigra americana*)—the first individual of this race to be recorded in Europe—was seen near De Beer, Holland, on 26th and 27th December, and picked up dead there on the 28th.—EDS.]

BIRDS SEEN DURING A CROSSING OF THE NORTH ATLANTIC, 16th-23rd OCTOBER 1954

By MAURICE CAMPBELL

CAREFUL notes were made on a crossing of the North Atlantic on the R.M.S. *Media*, leaving New York on 16th October 1954, at 6 a.m., and reaching Liverpool on 23rd October. Sailing had been delayed the evening before because of a hurricane reaching New York at 9 p.m., but the weather was good throughout the voyage, with steady sunshine until reaching the south coast of Ireland, though there was generally a moderate wind and a heavy swell. The longitudes given each day cover the area traversed from about 8 a.m. to 5 p.m. (ship's time).

WESTERN ATLANTIC

16th October. Longitude W.74-70 degrees. Light south-south westerly breeze, heavy south-easterly swell.

Nothing seen except the usual gulls Herring,* Laughing, and Great Black-backed. After we left the gulls behind about 30-40 miles out, several Pomarine Skuas were seen (I had good views of the shape of the tail), and possibly some Arctic Skuas: in both the white flash on the wings was seen clearly. A Mourning Dove flew by the ship several times and was last seen about 3 p.m. landing on the deck; and a small bird, probably one of the yellow warblers, was noted several times on the deck, for the last time on the next morning.

17th October. Longitude W.65-61 degrees. Moderate southerly breeze and sea and a heavy south-westerly swell.

A few Great Shearwaters and Fulmars were seen during the day.

MID-ATLANTIC

18th October. Longitude W.56-52 degrees. Moderate south-easterly breeze and sea and a heavy south-easterly swell.

Fulmars were more frequent but generally only one or two at a time and there were also more shearwaters† and a dozen were seen on one occasion. Later in the evening there were many more birds, so that they were almost continuously in view, and most of these were shearwaters. A few flocks of from 8 to 12 phalaropes (?Grey) were seen from time to time, perhaps on 4 or 5 occasions,

* Scientific names are listed in an appendix on page 210.

† Throughout the voyage all the shearwaters seen sufficiently close to the ship were identified as Great Shearwaters by the head pattern and the white at the base of the tail. Among the birds seen at greater distances there were occasionally what were probably Sooty Shearwaters (see text), but there was no evidence that any Cory's Shearwaters (*P. diomedea*) were about.

flying low over the water. A few Fulmars, shearwaters and phalaropes were seen settling on the sea but not very many.

19th October. Longitude W.48-44 degrees. Moderate easterly breeze and sea, heavy easterly swell.

A few Fulmars and shearwaters were seen throughout the day including perhaps one Sooty Shearwater. There was no increase towards evening. Only one flock of 3 or 4 phalaropes.

20th October. Longitude W.39-35 degrees. Light variable breeze, slight sea and swell.

30 to 40 Fulmars were following the ship as soon as I got up; the number increased up to 100 or so and was practically continuous all day. There were a good many Great Shearwaters rather further away but certainly much commoner round the stern half of the ship than elsewhere. About 4 p.m. (latitude 36) the whole of the north-west quadrant was full of Fulmars and shearwaters as far as one could see, and there must have been many thousands.

2 or 3 petrels were seen following the ship all day but never came close enough for me to be certain of the tail-shapes. I thought they were Leach's Petrels, but it is rare for them to follow a ship, and the alternative is Wilson's Petrel as I do not think the Storm Petrel goes so far west. There were also a few probable skuas, but they were not identified exactly and were not seen chasing other birds.

EASTERN ATLANTIC

21st October. Longitude W.29-25 degrees. Moderate westerly breeze and sea, heavy westerly swell.

Fulmars and shearwaters much the same as on the 20th all day. Two or three petrels followed in the morning but were not seen in the afternoon. Two immature Gannets seen about longitude 25°.

22nd October. Longitude W.18-14 degrees. Fresh west-north-westerly breeze, rough sea and heavy westerly swell.

Only a few Fulmars following the ship during the morning. By mid-day (longitude 16) a few shearwaters and again 2 petrels (?Storm Petrels). These were the last birds seen except some Fulmars which became less numerous and less regular during the day though a few were still seen after sunset. No Gannets seen.

SOUTH OF IRELAND AND IRISH SEA

23rd October. Longitude W.7-4 degrees. Fresh south-westerly breeze, rough sea and moderate swell.

There had been a gap between the area of numerous oceanic birds and those based on the Irish coast, but by 7 a.m. (after reaching the S.W. corner of Ireland about 3 a.m.) there were three Great Black-backed Gulls following the ship and these or others stayed with it most of the day. By 7.30 a single Snow Bunting landed

on the deck and was flying about the decks for over an hour. By 7.40 there were a few Kittiwakes round the ship and a few adult Gannets. By 9.30 Gannets were frequent and even more so an hour later when rounding the Tuskar lighthouse at the S.E. corner of Ireland.

Gulls were not common, but this may have been partly due to the rather stormy day with rain and very poor visibility. About 10.30 a Redwing landed on the ship but did not stay as long as the Snow Bunting. During the crossing of the Irish Sea birds again became rare but this may have been because of the squally rainy day. When the ship was rounding Anglesey gulls were seen again for the first time but not in great numbers, and another Redwing landed on board for a short time.

THE WESTWARD CROSSING IN LATE AUGUST

The westward crossing on R.M.S. Caronia, from 27th August to 3rd September, was very much less productive of birds. Fulmars, the commonest bird on the eastward trip, were not seen at all. The commonest bird was the Great Shearwater, but these were a few birds seen at intervals, sometimes no more than one or two in an hour; a few probable Sooty Shearwaters were seen as well. There were also some skuas from time to time, but the species was not identified: they were generally flying towards the south.

One or two immature Gannets were seen some distance out from New York, and approaching New York there was a small flock of terns, probably Gull-billed Terns. There were also half a dozen petrels that could not be identified though Wilson's Petrels seem most likely from the position; they appeared rather smaller than those on the return voyage.

APPENDIX-SCIENTIFIC NAMES OF BIRDS MENTIONED IN THE TEXT

Wilson's Petrel (<i>Oceanites oceanicus</i>)	Great Black-backed Gull
Leach's Petrel (<i>Oceanodroma</i>	(<i>Larus marinus</i>)
<i>leucorrhoa</i>)	Herring Gull (<i>Larus argentatus</i>)
Storm Petrel (<i>Hydrobates pelagicus</i>)	Laughing Gull (<i>Larus atricilla</i>)
Great Shearwater (<i>Procellaria gravis</i>)	Kittiwake (<i>Rissa tridactyla</i>)
Sooty Shearwater (<i>Procellaria grisea</i>)	Gull-billed Tern (<i>Gelochelidon</i>
Fulmar (<i>Fulmarus glacialis</i>)	<i>nilotica</i>)
Gannet (<i>Sula bassana</i>)	Mourning Dove (<i>Zenaidura</i>
Grey Phalarope (<i>Phalaropus</i>	<i>macroura</i>)
<i>fulicarius</i>)	Redwing (<i>Turdus musicus</i>)
Arctic Skua (<i>Stercorarius parasiticus</i>)	Snow Bunting (<i>Plectrophenax nivalis</i>)
Pomarine Skua (<i>Stercorarius</i>	
<i>pomarinus</i>)	

BUILDINGS AS SONG-POSTS

By DEREK C. HULME

FOR some years I was impressed by the number of birds singing on the gable ends of buildings so in 1952, to satisfy my curiosity, I took note of the perches used by birds in full song, daily throughout the year—apart from week-ends and holiday periods—along the route that I cycle between my home and workplace.

The district, though built-up, is pleasant with many mature ash, beech, elm, horse-chestnut, oak, poplar, and other trees. The buildings are mainly semi-detached or detached houses, with fewer bungalows, and all but one row of terraced houses having well-stocked gardens. The two-mile route is alongside allotments in Littleover, through residential Sunny Hill and the old village of Normanton to Derby's arterial road and the Rolls-Royce factory.

The singing birds visible from the road were counted as fairly as possible—i.e., with no bias towards any type of perch. Table I gives the percentage of each species of songster seen and consequently recorded on perches, estimated for the whole year from a sample month (May), during which all unseen singing birds, hidden from view by buildings, trees and high privet hedges, were also counted.

TABLE I—PERCENTAGE OF SONGSTERS RECORDED ON PERCHES

Woodpigeon (<i>Columba palumbus</i>)	...	...	...	...	...	...	100
Wren (<i>Troglodytes troglodytes</i>)	...	...	...	...	...	...	26
Mistle Thrush (<i>Turdus viscivorus</i>)	...	...	...	...	...	...	33
Song Thrush (<i>T. ericetorum</i>)	...	...	...	...	...	...	64
Blackbird (<i>T. merula</i>)	...	...	...	...	...	...	66
Robin (<i>Erithacus rubecula</i>)	...	...	...	...	...	...	50
Dunnoek (<i>Prunella modularis</i>)	...	...	...	...	...	...	56
Starling (<i>Sturnus vulgaris</i>)	...	...	...	...	...	...	74
Chaffinch (<i>Fringilla cœlebs</i>)	...	...	...	...	...	...	45

Table II shows the percentage of building (including metal fixtures), artificial (all other man-made objects) and natural (trees, shrubs and hedges) song-posts used by nine species.

TABLE II—TYPES OF SONG-POSTS USED

SPECIES	BUILDING	ARTIFICIAL	NATURAL
Woodpigeon	7	0	93
Wren	0	0	100
Mistle Thrush	4	0	96
Song Thrush	15	5	80
Blackbird	34	12	54
Robin	2	11	87
Dunnoek	24	24	52
Starling	60	3	37
Chaffinch	10	5	85
All above species	39	7	54

The following notes supplement the information tabulated in Table III, list the artificial perches used and summarize the observations of the previous seven years if they differ noticeably from those of 1952.

WOODPIGEON.—The chimney-pots were of two Normanton mansions, half-a-mile apart, and were my first records of this species singing on buildings although I have seen the Woodpigeon perching on a chimney-pot (1950), the gable end ridge tiles of houses (1951 and 1952) and on an H-type television aerial (August, 1952).

WREN.—I have no *local* record of regular song on a building, but have noted the Wren using fence-posts, cables, telegraph posts, the tension wire of a telegraph post and the gable end of a metal barn locally in previous years.

MISTLE THRUSH.—The gable end ridge tile song-post used was ornamental (i.e., it was decorated with a projection a foot higher than the normal ridge tiles).

SONG THRUSH.—One of the gable end ridge tiles was on a bungalow and one was on a brick garage. One of the birds I watched, after singing regularly on a mid-ridge tile, hopped to the gable end and continued song there. Artificial song-posts: bill-boarding (3 times), telegraph posts (3) and cable (2). A telegraph wire was used once in 1951.

BLACKBIRD.—Two of the gable end ridge tiles were ornamental, eleven were on bungalows and one was on a brick garage. One of the chimney-pots was of a bungalow. Two of the gutter song-posts were on the metal scroll below the hip ridge tiles. The weather-cock was on a small branch bank and the Blackbird sang on the head of the cock. Four of the television aerials were X-type. Artificial song-posts: wireless aerial pole (21 times), telegraph posts (15 with 6 on the insulators), cables (7), wooden sheds (7 with 5 at the gable end), the roof-edge of a corrugated iron shed (2) and on a telegraph wire, a beanstick and a street lamp.

ROBIN.—One sang on the edge of a roof gable two feet above the gutter. Artificial song-posts: cables (6 times) and on a brick-wall, the middle of a wooden shed ridge, a beanstick and a fence post. In previous years a television aerial, a chimney-stack, gable end ridge tile and gutter of houses were used.

DUNNOCK.—Two of the gable end ridge tiles were ornamental on bungalows and one was on a brick garage. One of the hip ridge tiles was on a bungalow. Artificial song-posts: cables (27 times), wire fence (5), fence-posts (2) and on a telegraph post, a telegraph wire, a telegraph post tension cable and a greenhouse roof. A chimney-pot of a house was used in 1947.

STARLING.—Six of the gable end ridge tiles were ornamental and one of the other ridge tiles and twenty-two of the chimney-

pots were on bungalows. One of the television aerials was an X-type. Artificial song-posts: cables (12 times), telegraph posts (6 with one on insulator), wooden fences (3) and a clothes- post.

CHAFFINCH.—Artificial song-posts: cables (5 times) and on a beanstick. In previous years only one gable end ridge tile of a house was recorded and the shade of a street lamp was used once in 1951.

The following species were also counted along the route but as none of these were recorded on more than ten occasions they are not included in the tables or diagram.

Cuckoo (*Cuculus canorus*). Heard frequently but those seen were on natural perches.

Skylark (*Alauda arvensis*). Over waste-ground.

Great Tit (*Parus major*). Many heard, but the few seen were all on natural perches.

Whitethroat (*Sylvia communis*). One on a telegraph wire.

Lesser Whitethroat (*S. curruca*). One heard in garden shrubbery.

Willow Warbler (*Phylloscopus trochilus*). Twice on cables.

Chiffchaff (*Ph. collybita*). One heard singing in bushes.

TABLE III—ACTUAL NUMBER OF BUILDING SONG-POSTS USED

Perch	Woodpigeon	Mistle Thrush	Song Thrush	Blackbird	Robin	Duncock	Starling	Chaffinch
Gable end ridge tile	1	15	99	1	24	33	9
Other ridge tiles		2	7		6	8	2
Hip ridge tile			3		7		
Edge of roof				1		1	
Chimney-pot ...	2		4	10			393	
Chimney-stack		2	11			27	
Gutter		1	10			19	
Soil pipe...						4	
Television aerial			15			11	
Weathercock			1				

The diagrammatic sketch shows the total number of all types of song-posts used by the nine species listed in Table I.

It will be seen that the perches commanding the widest field of vision are the most used, though it is difficult to understand why some stations, which satisfy this requirement, are so rarely used. For example, I have only two records in seven years of a lamp standard song-post. It cannot be that the traffic is disturbing to the songsters as many of the tree branches used were overhanging busy roads. The paucity of telegraph wire records over those of

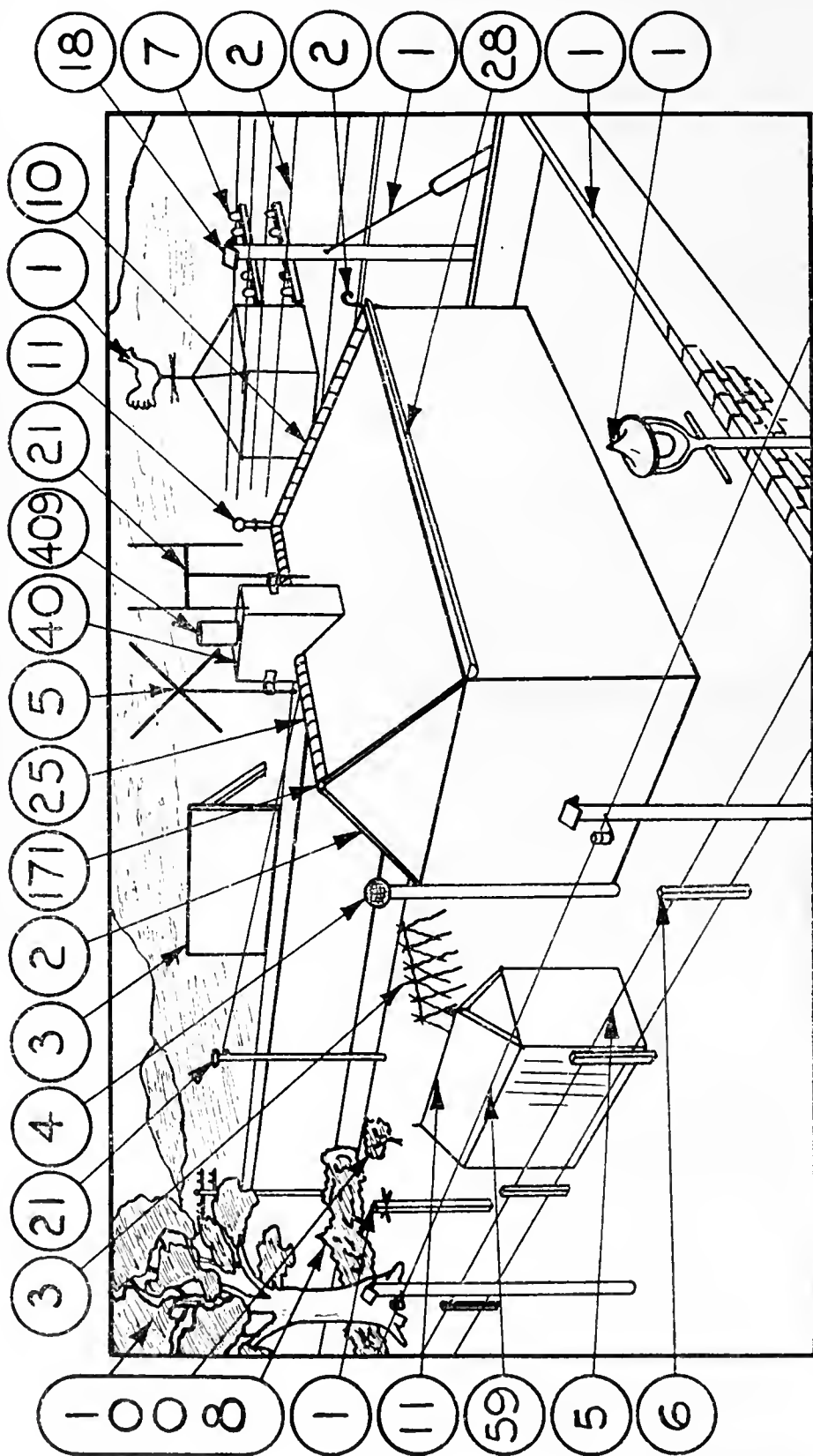


DIAGRAM SHOWING NUMBER OF EACH SONG-POST USED BY NINE SPECIES.

the low power electric cable arc understandable on account of the smaller diameter and vibratory nature of the former.

The television aerial appears to be an ideal song-post for the Blackbird and Starling. These aerials have been erected in Derby in ever-increasing numbers from early 1949 onwards and I particularly watched for their acquisition as song-posts. My first record was on May 23rd, 1951, when a Blackbird sang on an H-type aerial. This was followed by four September records: a Starling on an X-type on the 10th and the 26th; a Robin on an H-type on the 21st; and a Starling on an H-type on the 22nd. These records were confined to the route under review. In all 1951-52 cases it was the horizontal member of the H-type or the intersection of the diagonal members of the X-type aerial that was used except on the one occasion when a Starling sang on a diagonal member below the intersection. Dipoles, another common type in the district, have not been used, though the bracket of this single vertical member type is a potential song-post.

SUMMARY

The song-posts of birds along a two-mile built-up route in the Midlands were noted throughout 1952 in order to establish the number of perches on buildings used by each species present. The Starling alone showed a preference for building song-posts, while the Wren, in this particular year, patronized natural song-posts exclusively.

After natural perches the most popular song-post was found to be the chimney-pot followed by the gable end ridge tile of buildings. The latter was the most favoured building song-post of the Mistle and Song Thrushes, Blackbird, Dunnock and Chaffinch. The most used artificial song-post proved to be the low power electric cable.

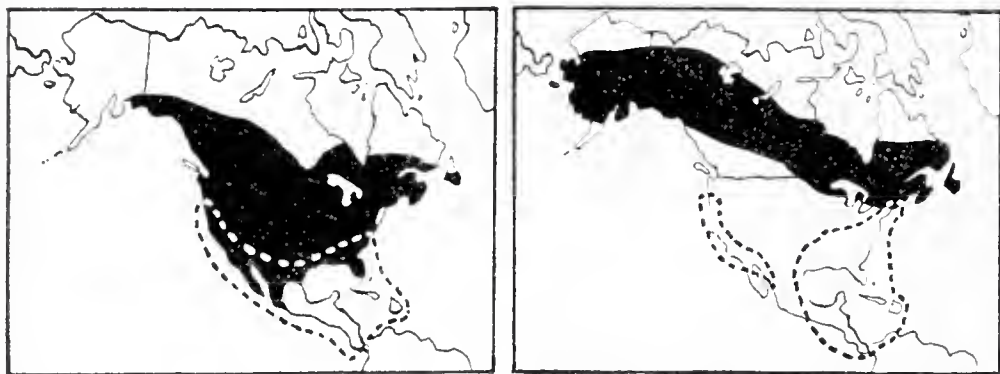
The local use of the television aerials as song-posts is reviewed.

SOME PHOTOGRAPHIC STUDIES OF THE MYRTLE WARBLER

Photographed by ALLAN D. CRUICKSHANK, HUGH M. HALLIDAY
and E. H. WARE

(Plates 25-30)

THE second American warbler to occur in Britain within a space of two months (see pp. 204-207), the Myrtle Warbler (*Dendroica coronata*) is in America next to the Yellow Warbler (*D. petechia*) one of the best known of the group. A. C. Bent in *Life Histories of North American Wood Warblers* (1953, pp. 239-258) writes: "All through the eastern United States this is by far the most abundant warbler on both migrations, being about the first to arrive in the spring and the last to leave in the fall, often remaining all winter nearly up to the southern limits of its breeding range. It is a large, conspicuous warbler, not at all shy, and is to be found almost anywhere" In general terms it breeds in Canada, and winters on either side of the rest of North America (see map). There are irregular winter records north to the



(a)

(b)

THE DISTRIBUTION OF TWO NORTH AMERICAN WARBLERS: (a) YELLOWTHROAT (*Geothlypis trichas*) AND (b) MYRTLE WARBLER (*Dendroica coronata*)

In each case the breeding range is indicated by the black area and the winter-quarters by being enclosed with dotted lines.

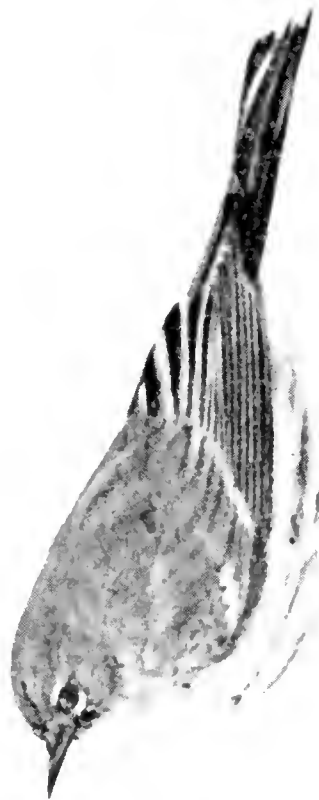
Canadian borders, and, as Bent says, "It spends the winter farther north than any other wood warbler." Thus it is not surprising that the Myrtle Warbler in Devon was able to survive for six weeks in snowy weather. The Myrtle Warbler is one of the only two American wood warblers to have been recorded in Siberia, a bird having been obtained on the Chukotsk Peninsula on 25th May 1879 (*Birds of the Soviet Union*, 1954, Vol. 5, p. 602).

The distinctive feature of all plumages of the Myrtle Warbler, except the juvenile, is the pattern of four yellow patches—on the crown, on the rump, and on each flank. Only one other American warbler has this combination of colours, and that is Audubon's Warbler (*D. auduboni*) which has, in addition, a fifth yellow



E. H. Ware

MYRTLE WARBLER (*Dendroica coronata*): NEWTON ST. CYRES, DEVON, JANUARY FEBRUARY 1955
 This indicates well the general shape and build of the bird, also the incomplete orbital ring and the two light wing-bars. As it happens, in none of these plates is the yellow on the crown or on the rump brought out. (see pages 204 and 216)



E. H. Ware

MYRTLE WARBLER (*Dendroica coronata*): NEWTON ST. CYRES, DEVON, JANUARY FEBRUARY 1955
This was taken during a blizzard and shows the warbler on the bird-table approaching the bread and marmalade which it frequently ate. The general colour of the upper-parts was brown, though the blue-grey of summer plumage was beginning to show in places, particularly in the area of the carpal joint.



E. H. Ware

MYRTLE WARBLER (*Dendroica coronata*): NEWTON ST. CYRES, DEVON, JANUARY-FEBRUARY 1955
 Throughout the time it was seen, this bird dominated the feeding table and the trees by it, driving away Blue Tits (*Parus caeruleus*) and other species whenever they approached. The flattened and elongated throat posture adopted on all these occasions is well shown here. (see page 206)



E. H. Ward

MYRTLE WARBLER (*Dendroica coronata*). NEWTON ST. CARRS, DEXON.

JANUARY-FEBRUARY 1955

The pattern of the dusky streaking on the dull white under parts can be seen here, together with the slight eye-stripe and the black of summer plumage that was beginning to appear on the lores. The eye is noticeably large.



U.S. National Audubon Society

Hugh M. Halliday

PAIR OF MYRTLE WARBLERS (*Dendroica coronata*) AT THE NEST, AMERICA

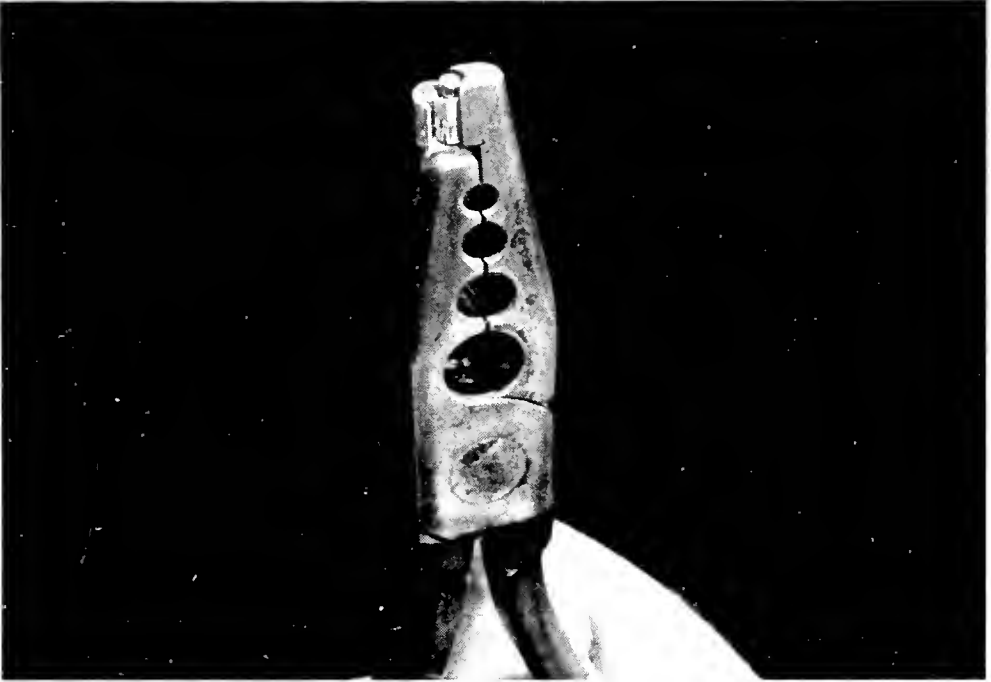
The comparison of the female above and the male below shows the latter's more contrasting breeding plumage, with the black cheeks, darker wings, and blue-grey upper-parts streaked with black. The yellow on the crown, half concealed and thus showing as a stripe, is just visible on the male.



U.S. National Audubon Society

Allan D. Cruickshank

FEMALE MARBLED WARBLER (*Dendronca coronata*) AT THE NEST: AMERICA.
The nests of this species are almost invariably sited in conifers some distance from the ground. They are built of coniferous twigs, mixed with grasses, roots, fibres, moss etc., lined with quantities of hair and feathers. (See page 217)



Eric Hosking

THE "DUNGENESS" RINGING PLIERS IN USE

The upper photograph shows the device on the nose of the pliers for pre-shaping size 4 and 4½ rings before over-lapping. The lower shows the final rounding off of the ring on the bird's leg. (See page 229)



SILT SANDPIPER (*Micropalama himantopus*): SPURN, YORKSHIRE,
AUGUST/SEPTEMBER 1954

(From sketches by John Cudworth)

The lower sketch shows better than the photographs recently published (*antea*, plates 1-5) the barring from the breast to the under-tail characteristic of this species in summer plumage. The upper sketch shows the flight pattern and in particular the barring on the tail. The characteristic bill, the head pattern, and the length of leg are clearly illustrated (*cf. antea*, pp. 18-20 and 32-33).

patch—on the throat. The adult male Myrtle has in summer the head, mantle and back grey streaked with black. This pattern is well shown in plate 29, which also gives some indication of the black cheeks and lores, the slight white eye-stripe and the two white wing-bars. The wings and tail are black-brown, the outer three feathers on each side of the latter having patches of white on the inner web, thus forming when the tail is spread two conspicuous areas of white, which were very noticeable in the Devon bird. The under-parts are greyish-white, lightest on the breast, and streaked with black. In winter the male is brown instead of grey on the upper-parts, and lacks the black on the side of the head (cf. plates 25-28 with 29). The female is duller, and though she has the four yellow patches, these are less conspicuous. She is browner above and this is well shown by the comparison of the two sexes in plate 29. The cheeks, wings and tail are brown instead of black, while the eye-stripe is buff. Most individuals have an incomplete orbital ring (see particularly plates 25, 28 and 30).

Plates 29 and 30 show typical nest-sites, one in a fir and the other in a pine. Bent quotes several authorities to show that the nest is almost invariably in a coniferous tree, anything from 5 to 50 feet up. Usually they are between 10 and 15 feet from the ground, often on horizontal branches some way out from the trunk. They are composed of coniferous twigs mixed with grasses, moss, etc., lined with quantities of hair and feathers. The nests are fairly substantial and from the measurements given by Bent appear to be about the same size as those of Dunnocks (*Prunella modularis*). The eggs, usually 4 or 5 in number, are creamy-white, spotted round the large end with various shades of brown.

The Myrtle is one of the few warblers that can subsist for long periods on berries and seeds, though preferring insects; in fact, its name comes from a fondness for the berries of waxmyrtle. In summer the food consists almost entirely of caterpillars, grubs, and a wide range of insects from grass-hoppers to mosquitos, which may be caught by sallies into the air from a perch after the manner of a flycatcher. In Florida, however, they are said to drink the juices of fallen oranges. In view of the winter record in Devon, it is interesting to note that Robert Ridgway (1889, *The Ornithology of Illinois*) says, "It may often be seen in mid-winter when the ground is covered with snow . . . gleaning bread crumbs from the door-steps or hunting for spiders or other insect tidbits in the nooks of the garden fence or the crevices in the bark of trees." Myrtle Warblers are usually very fearless, approaching close up to habitations, as did the bird in Devon. Many have been ringed in America, for they are easily trapped.

The call note "chick" is louder than that of most American warblers, and once heard it is a most distinctive and easily recognised sound.

I.J.F.-L.

SPECIAL REVIEW

By D. D. HARBER

THE BIRDS OF THE SOVIET UNION. Under the general editorship of G. P. DEMERYEV and N. A. GLADKOV. (*State Publishers "Soviet Science"*, Moscow, 1951-54). 6 vols. (In Russian).

The decision to produce this work was approved by a conference at the Biological Faculty of Moscow University held on 23rd December 1944. It has been written mainly by zoologists of Moscow University though those from other scientific institutions in the Soviet Union have played some part. In questions of systematic classification use has been made mainly of the collections of the Zoological Museum of the Moscow (Order of Lenin) State University named after Lomonosov. However, when necessary and possible, material from other collections in the Soviet Union has also been studied. It is pointed out in the Introduction to the first volume that this is the first work of its kind since the publication in 1805 of *The Birds of Russia* by M. A. Menzbier which covered only the birds of European Russia and the Caucasus.

About 700 species (including those only known in the Soviet Union as vagrants) are dealt with. The order of classification accepted by the authors is Galliformes, Farniciformes, Columbiformes, Pterocletiformes, Ralliformes, Gruiformes, Otidiformes, Charadriiformes, Lariformes, Alciiformes, Gaviiformes (Colymbiformes), Colymbiformes (Podicipitiformes), Procellariiformes, Anseriformes, Pelecaniformes, Ciconiiformes, Phoenicopteriformes, Falconiformes, Strigiformes, Cuculiformes, Caprimulgiformes, Coraciiformes, Upupiformes, Piciformes, Micropodiformes and Passeriformes. But this is not adhered to in the present work, as to save time, the orders were published as they were completed.

A detailed account is given of each order under the following headings: morphology (with sub-headings for external characteristics, anatomical characteristics); manner of life; systematics (under which are included fossil remains from all parts of the world); geographical distribution; practical significance. A "key" is also given for each order by means of which a bird of that order can be identified in the hand. Inside each natural order the species are numbered from one upwards. The account of each species (or sub-species) is given under the following headings: distribution (with sub-headings for area, status, dates, habitat, the results of ringing, numbers); ecology (with sub-headings for breeding, moulting, food); field characteristics; description. A map is given for each species showing world distribution, both when breeding and in winter, and also the areas occupied by sub-species, if any. Each species is illustrated by a black-and-white drawing. Some-

times one is also given for a sub-species. In addition each volume has four or five coloured plates.

Scientific names are, of course, given in European lettering and these, together with the maps, make it possible for a non-reader of Russian to follow distribution. It is to be noted, however, that the scientific names used are not always those most familiar in this country.

The British reader is at once struck by differences of emphasis as compared with *The Handbook*. Very little attention is given to display and posturing, in fact these are not even mentioned in some cases while in others one finds little more than the bare statement that courtship games, etc., take place. Occasionally, very summarized descriptions are given. Voice, likewise, is a feature upon which very little emphasis is placed and in some cases it is not really mentioned at all. For instance, all that we are told about the call of the Redshank (*Tringa totanus*) is that it is "a noisy bird". Neither courtship nor voice are given special headings. Sometimes such information as is given is to be found under breeding, sometimes under field characteristics. But these latter also, although given in more detail and in a special section, are a very weak feature of the work. Some details are actually erroneous as when we are told that the bill of the Shag (*Phalacrocorax aristotelis*) is longer than that of the Cormorant (*P. carbo*), although measurements given in the descriptions of these birds show that this is not the case. But the general weakness of the field characteristics is their inadequacy to provide sufficient information to separate "difficult" birds in the field. This is particularly so with regard to species in which the winter plumage differs widely from the summer (e.g. divers and grebes) though this may perhaps be partly excused by the fact that the birds in question do not normally winter in the Soviet Union except in the extreme south. But a field description such as the following for the Lesser Kestrel (*Falco naumanni*) has little to commend it: "Resembles the ordinary Kestrel but flight lighter, does not hover; considerably smaller in size; tail wider and rounder; call more drawn out and higher, like 'klee-klee-klee' ". The shortage of coloured illustrations is naturally a big disadvantage. Moreover, the drawings given sometimes contain surprising inaccuracies; e.g. the bill of the Red-throated Diver (*Gavia stellata*) is shown as quite straight while the tarsi of the Golden Eagle (*Aquila chrysaetos*) are drawn as only feathered half-way down (in both cases the true state of affairs is described in the text). In one of the very few flight drawings, designed to enable the reader to separate the Black-tailed Godwit (*Limosa limosa*) from the Bar-tailed Godwit (*L. lapponica*), the legs of the latter are shown as projecting distinctly further beyond the tail than those of the former!

A natural consequence of the lack of development of field identification in the Soviet Union is the obviously general use of the gun

rather than binoculars. The authors are, no doubt rightly under the circumstances, generally sceptical of records not backed up by "material obtained" even in the cases of easily identifiable species, while no breeding record out of the ordinary is considered acceptable unless one of the parent birds has been obtained.

It must be said that the sections dealing with plumage description are in general far less detailed and complete than those contained in *The Handbook*, even taking into account the fact that some of the data dealt with under this section in the latter work are covered under "moulting" in *The Birds of the Soviet Union*.

On the other hand it is obvious that very great attention has been paid to distribution. There seems no doubt that the authors have got together all the information on this subject available in the Soviet Union and have critically examined it, rejecting many past claims based upon insufficient evidence, particularly of arctic-breeding species alleged to have been found nesting far south of their known range. Where there is as yet insufficient information to determine the full breeding-range of a species or sub-species this is stated and, given the vast territory of the Soviet Union, it is not surprising to find that this is the case with quite a number of birds, not only in Siberia and Central Asia but also in European Russia. Distribution, so far as it is known, is given not only by means of the maps but also in the text, but it is unfortunate that occasionally there are discrepancies between the two. As indicated above, the maps (and the text) give also the world distribution of species and sub-species. It is stated that the information on distribution outside the Soviet Union is based upon "the newest and best works" and it is obvious from the references to "Witherby" that *The Handbook* has been used so far as Britain is concerned. The not infrequent errors with regard to distribution in Britain are therefore rather surprising. Thus, while the text gives Wales as the breeding locality of the Kite (*Milvus milvus*) the map gives this as south-west England and the British Isles are given on the map as part of the regular winter-quarters of the European Hawk Owl (*Surnia u. ulula*). The text on the section dealing with the Columbiformes in particular has some remarkable mis-statements so far as Britain is concerned.

Great attention has been paid to migration dates and a good deal of material has been collected from different parts of the Soviet Union. One gets the impression, however, that regular observations on this subject are only made in a fairly limited number of localities. Breeding particulars are given in considerable detail and very fully so far as many species are concerned. In the cases of others, however, it is admitted that no study has as yet been made in the Soviet Union and in fact in some cases the only information given is quoted directly from *The Handbook*.

On questions relating to the acceptance or rejection of sub-species the authors generally pursue a very rational middle course.

being on the whole perhaps more inclined to reject sub-species than to accept them. A number of sub-species accepted in *The Handbook* are thus rejected and others are given, though doubtfully, only because there is not sufficient material available in the Soviet Union to justify a definite stand being taken.

A weakness of the work is the absence of a bibliography. References are made only to authors' names or to these and dates of publication. It is thus sometimes difficult or impossible for the foreign reader at least to know whether facts are being quoted from a Soviet or a "foreign" source.

On the whole, the work must be regarded as the product of much careful and painstaking efforts of the best Soviet ornithologists. Despite its defects (most of which are relatively minor) it is not only a landmark in the history of Russian ornithology but is also of great value to the foreign ornithologist. It cannot be said to contain a great deal of new information of interest to the British reader. But it is of value nevertheless since it shows that in the majority of cases the rather general statements given in *The Handbook* as to the distribution of birds breeding in the Soviet Union still hold good. It also outlines more precisely the limits of this distribution and in some cases gives new facts which show that the data given in *The Handbook* need revision. So far as the details of the breeding process are concerned it is of value to have so many of the details given in *The Handbook* confirmed and supplemented as a result of observations made in the Soviet Union. Like *The Handbook*, *The Birds of the Soviet Union* is an easy book to use since one has, usually, only to refer to the appropriate section in order to ascertain whether it contains the information one is seeking.

Each of the six volumes contains from 480 to 803 pages (6½ inches by 10 inches). As is normal in the Soviet Union we are told the number printed of each volume. In the case of the first volume the printing is given as 10,000, but perhaps only 5,000 were actually issued as after the first figure we read "(1-5000)". Certainly by volume 2 the printing was only 5,000 and by the last volume had dropped to 4,000. These figures, scarcely enough, one would have thought, to have supplied reference libraries, do not indicate any wide development of "amateur" ornithology in the Soviet Union. The price varies from 26 to 40.65 roubles a volume. Since the rate of exchange is quite arbitrary it is difficult to say what this means in our currency. But in the Soviet Union the complete work would cost rather less than a week's wage of a skilled worker.

CONTENTS OF VOLUME 1 (1951; 652 pages)*

Volume 1 begins with the Pelecaniformes, dealt with by A. M.

* Discussions of some of the more interesting points in each of the other five volumes will appear in successive issues of *British Birds*.

Sudilovskaya. At the Volga delta the incubation period of the Southern Cormorant (*Phalacrocorax carbo sinensis*) has been found to be 28-30 days, i.e. about the same as that of the Cormorant (*P. c. carbo*), whereas *The Handbook* gives it as apparently shorter. It is also stated that the breeding plumage of the latter race is the same as that of the former. This is of interest in view of the remarks made on this subject by the late B. W. Tucker (*antea*, vol. xlii, pp. 203-204). However, the breeding range of *P. c. carbo* is very limited in the Soviet Union (Murmán coast only) and it is possible that only a small amount of material was available to the Russian writer. Our race of the Shag (*P. a. aristotelis*) which breeds only on the Murmán coast and its islands is increasing in numbers and extending its range eastwards there. The Gannet (*Sula bassana*) is recorded for the Soviet Union only as a rare casual visitor to the Murmán coast, all records being over 50 years old.

The Falconiformes are the work of G. P. Dementiev and 44 species besides numerous sub-species are dealt with. He opposes the destruction of birds of this order except in extreme cases, pointing out that normally they are harmless or even useful. He adds, besides, that "the cultural-aesthetic and scientific significance of birds of prey is very great and in relation to them, as to other products of nature, all questions cannot be settled from the angle of primitive utilitarianism. Indiscriminate struggle against birds of prey is in essence the fruit of more or less malicious ignorance." The male Gyr Falcon (*Falco r. rusticolus*), we are told, takes some part in incubation and has incubation-patches though these are smaller than those of the female. The Hobby (*F. subbuteo*) has been known, though rarely, to winter in Central Asia. On rare occasions this species has been found nesting on cliffs (Kirghiz mountains). It is stated that, on the basis of the material available, it is not confirmed that the Merlin (*F. columbarius*) has a second moult confined to body-feathers, February to March or April, as stated in *The Handbook*. Whereas this species is relatively rare in the Soviet Union, the Kestrel (*F. tinnunculus*) is the commonest of the falcons there, its numbers apparently not being affected by fluctuations in its normal food supply. The egg-clutch of the Lesser Kestrel (*F. naumanni*) is given as 3 to 7, usually 4 to 5. The race *pekinensis* of this bird is rejected on the grounds that individual variation is great and not geographically localised. The Red-footed Falcon (*F. vespertinus*) does not nest in the Aralo-Caspian area although it was formerly believed to do so. There are indications that this bird sometimes builds its own nest, but this needs confirmation. It has been known to nest, though rarely, in holes, on cliffs and on the ground amongst bushes. While both sexes incubate only the female does so at night and at the end of the incubation period (given as "apparently 28 days"). The Pallid Harrier (*Circus macrourus*) does not normally nest further north than Moscow and Kazan, though it has been known

to do so in the Baltic region. Its typical habitat is the dry steppe. The Marsh Harrier (*C. æruginosus*) on its arrival in spring sometimes eats carrion. Its nesting in the Crimea (given as doubtful in *The Handbook*) is confirmed. The White-tailed Eagle (*Haliaëtus albicilla*) is declining in numbers in the more populated parts of European Russia (e.g. in 1937 there were perhaps only two pairs in the area of the lower Dnieper) and even in the Amur region of the Far East. But it is still abundant in the north, particularly in the valleys of the Ob and Yenisei. The Egyptian Vulture (*Neophron percnopterus*) nests in isolated colonies in Podolia, the Crimea and the Caucæus, not South Russia to Caucæus as stated in *The Handbook*. Its incubation period is given as "apparently about 40 days". The Griffon Vulture (*Gyps fulvus*) probably does not nest in the south-west Ukraine, the southern Urals and north-west Kazakhstan as has been suggested in the past. The Spotted Eagle (*Aquila clanga*) nests in the northern Ukraine and the lower Volga region but only doubtfully further south in this area, being probably absent from the Crimea, the Caucæus and Turkestan. But its boundaries in both Europe and Asia are little known owing to confusion with the Lesser Spotted Eagle (*A. pomarina*). The Osprey (*Pandion haliaëtus*), although common in parts, apparently shows little tendency towards sociable breeding in the Soviet Union, as nesting pairs are stated to be usually at a great distance from each other. With rare exceptions it builds on tall trees. Cliff building is very rare but has been recorded from Armenia.

The Strigiformes are by G. P. Dementiev and 28 species together with sub-species are dealt with. The Snowy Owl (*Nyctea scandiaca*) normally hunts by sitting on the ground, preferably on an eminence, and throwing itself on its prey as it approaches. During twilight it will sometimes hunt on the wing, hovering like a Kestrel. Most migrate south in winter, the extent of this movement and the numbers involved depending upon the snow-fall and food supplies. In some winters mass southerly movements, even reaching the Ukraine, have been recorded, but these do not coincide with similar movements in North America. The Scops Owl (*Otus scops*) nests further north in European Russia than is indicated in *The Handbook*, reaching to the Leningrad district. The Long-eared Owl (*Asio otus*) in favourable years has been known to lay as many as 9 eggs (Leningrad) or even 10 (Kazan, 1891). The Short-eared Owl (*A. flammeus*) in years with an abundant food supply has been known to lay eggs and raise young in winter in south Russia.

The Cuculiformes are the work of A. M. Sudilovskaya. It is stated that though the female Cuckoo (*Cuculus canorus*) normally lays her egg directly into the nest chosen "sometimes eggs are laid on the ground near the nest and taken there with the aid of the bill" though no evidence or authority is given for this statement. A map, based upon the data published by Kaigorodov in

1907, shows the average dates of the spring arrival of this species in European Russia. The movement is from south-west to north-east and starts from 23rd April in Bessarabia while Uralsk (about the same latitude as Sussex) is reached by 5th May and a point in the Urals at about the same latitude as Newcastle by 11th May.

The Caprimulgiformes are by E. P. Spangenberg. Our race of the Nightjar (*Caprimulgus e. europæus*) extends eastwards as far as Transbaikalia, a gap to the south separating it in Asia from *C. e. zarudnii* which reaches almost as far east.

The Coraciiformes are by A. M. Sudilovskaya. The Roller (*Coracias garrulus*) has been extending its range northwards in European Russia as a result of the thinning out of forests by felling and fires but does not seem to have as yet penetrated further north than Leningrad as a breeding species. An analysis is given of the stomach contents of 400 adults obtained in June and July (one hopes not in the same year) in an area of the northern Caucasus. The Bee-eater (*Merops apiaster*) does not nest in the area between the Caspian and Aral Seas. The breeding of this species has apparently been studied in some detail and a good deal of information, some of it seemingly new, is given. Although this species has, it is believed, on occasions been encouraged to nest north of its normal range as a result of the development of bee-keeping it is pointed out that it is only at certain times of the year that it raids hives and that at other times it is actually beneficial by eating insect pests.

The Upupiformes are made a separate order and this is dealt with likewise by A. M. Sudilovskaya. Of the races of our Hoopoe (*Upupa epops*), *U. e. saturata* is apparently not recognized (at any rate it is not mentioned) and the typical race thus extends across Siberia and Central Asia to China. At first only the female incubates, but later the male also takes part. A second laying is believed to occur in the south, but this is not fully established.

The Piciformes are by N. A. Gladkov. The only remark that it seems necessary to make on this section is that there does not appear to be any decline in the numbers of the Wryneck (*Jynx torquilla*) in the Soviet Union, or at least none is mentioned.

The Apodiformes (or Micropodiformes, as the Russians term them) are the work of E. S. Ptushenko. The Swift (*Apus apus*) when nesting in forests (as it frequently does) makes use not only of old woodpeckers' holes but of any suitable cavity in trees. With the growth of towns it is extending its range, e.g. in the Urals it formerly was only found in wooded areas but now nests in towns in treeless localities. The Needle-tailed Swift (*Chactura caudacuta*) has been found nesting as far west as the Ob. It normally nests in hollow trees. Its nesting in cliffs has been disputed but is now established for certain localities. It is described as the swiftest bird in the U.S.S.R. with a speed of up to 170 kilometres an hour.

(To be continued)

ADDITIONAL RECORDS OF PROTO- CALLIPHORA (DIPTERA) IN BIRDS' NESTS

By D. F. OWEN

(Edward Grey Institute, Oxford)

and J. S. ASH

(Game Research Station, Fordingbridge)

IN an earlier paper (Owen, 1954) a request was made for records of parasitic dipterous flies *Protocalliphora azurea* (Fallen) from the nests of birds in Britain. In this paper the biology of this fly was outlined very briefly and many European, American and some other records were summarized. The present paper is intended as a summary of information received, and includes also a list of birds whose nests have been examined for this insect (Appendix).

The records of *Protocalliphora* given here have been derived from the following sources: J. S. Ash (Sunninghill, Berkshire, 1948 and 1949), D. F. Owen (Wytham, Berkshire, 1954); and also J. K. Bates (Wytham), J. Coulson (Durham), I. J. Ferguson-Lees (Sussex), D. Kime (Huntingdon) and G. R. Mountfort (Buckinghamshire), to all of whom we are extremely grateful for placing the records at our disposal.

ANNOTATED LIST

In the following list we have given all the new records obtained, species marked with an asterisk being additional host records to the list already published (Owen, 1954).

*LITTLE OWL (*Athene noctua*).—In June 1949 five flies were bred from a nest obtained at Sunninghill.

*WOODLARK (*Lullula arborea*).—A single larva was found attached to the leg of one of a brood of nestlings at Sunninghill in 1948.

SWALLOW (*Hirundo rustica*).—Of 17 nests collected at Wytham in 1954 all were infested. The number of larvae or pupae per nest averaged about 50. In one nest, where the young had recently fledged, there were 25 pupae and 31 larvae. In none of the Swallow nests was there evidence that the young had suffered (J. K. Bates).

GREAT TIT (*Parus major*).—31 nests (in nestboxes) at Wytham in 1954 were examined and it was found that 16 were infested. The number of larvae or pupae per nest ranged from one to 14 with an average of six. Each nest was examined soon after the young had flown and apart from one nest, the larvae had pupated. From two nests collected at Sunninghill in June 1949, 55 and 39 flies were bred.

BLUE TIT (*Parus caeruleus*).—Of 18 nests (in nestboxes) at Wytham in 1954, six contained larvae or pupae of *Protocalliphora*. The number in each nest ranged from one to 26 with an average of nine. In one nest where the two-thirds grown young had been destroyed by a predator, there were 26 nearly full-grown larvae. These were removed and unsuccessful attempts were made to get them to feed on the dead nestlings. Eight flies were bred from a nest obtained at Sunninghill in June 1949.

*MARSH TIT (*Parus palustris*).—One nest (in a nestbox) at Wytham in 1954 contained 22 pupae.

*NUTHATCH (*Sitta europaea*).—232 flies were bred from a single nest at Sunninghill in June 1949. This is an exceptionally high number, but the young were presumed to have fledged successfully.

*WREN (*Troglodytes troglodytes*).—A nest examined at Wytham in September 1954, long after the young had flown, contained two empty pupae. Another nest collected by J. K. Bates at Wytham in 1954 contained about 50 larvae. The young birds had been destroyed by a predator. From three nests collected at Sunninghill in June 1949, one, 13 and 111 flies were bred. Armstrong (1953) in his review of the parasites of the Wren, does not mention *Protocalliphora*.

*SONG THRUSH (*Turdus philomelos*).—From two nests collected at Sunninghill in May and July 1949, one and two flies were bred.

*BLACKBIRD (*Turdus merula*).—24 flies were bred from a nest found at Chester-le-Street, Co. Durham in 1952 (J. Coulson). Two nests obtained at Sunninghill in June and July 1949 contained 72 and 23 flies, and two nests collected by J. K. Bates at Wytham in 1954 were also affected, but the number of parasites was not counted.

ROBIN (*Erithacus rubecula*).—From two nests obtained at Sunninghill in July 1949 two flies were bred.

*SPOTTED FLYCATCHER (*Muscicapa striata*).—In June 1953 four young in a nest in Buckinghamshire died eight days after hatching. Examination showed that the nestlings had between four and six *Protocalliphora* larvae attached to the bare skin of the abdomen (G. R. Mountfort). It is also reported from a Spotted Flycatcher's nest at Huntingdon (D. Kime), and one larva was found attached to a nestling in a brood at Sunninghill in 1948.

DUNNOCK (*Prunella modularis*).—One fly was bred from a nest obtained at Sunninghill in May 1949, and it was found, but numbers not counted, by I. J. Ferguson-Lees in a nest in Sussex in June 1954.

*STARLING (*Sturnus vulgaris*).—One nest collected at Wytham in 1954, and examined before the young had fledged, contained about 50 larvae. Two of the nestlings eventually died, but it was not ascertained whether the death was due to *Protocalliphora* or some other factor, or both (J. K. Bates).

*HAWFINCH (*Coccothraustes coccothraustes*).—An adult fly was found in a nest in Buckinghamshire on 15th June 1952. It is however rather unlikely that this fly had hatched from a pupa in the nest as the young had only flown during the previous 24 hours (G. R. Mountfort).

The following examples from Sunninghill show that, besides a relatively high population of *Protocalliphora*, nestlings may also survive with many other parasites present, particularly fleas:

1. Great Tit: 55 flies, 683 *Ceratophyllus gallinae* Schrank, 2 *C. fringillae* (Walker) and 6 *Dasyptyllus gallinulae* (Dale). The nest contained 9 eggs on 16th May, young on 4th June and all were (presumed) fledged on the 12th.

2. Great Tit: 39 flies, 37 *C. gallinae*, 1 *D. gallinulae*. A number of young were seen to leave the nest on 6th June.

3. Blue Tit: 8 flies, 1304 *C. gallinae*, 6 *D. gallinulae* and 2 *C. fringillae*. Eggs on 15th May, young on 30th May and 4th June, all fledged on 13th June.

4. Nuthatch: 232 flies, 78 *C. gallinae* and 2 *D. gallinulae*. 2 young on 17th June and both (presumed) fledged on the 20th.

5. Wren: 111 flies and 2 *C. gallinae*. 5 eggs on 7th May, 7 young on 30th May and all (presumed) fledged on 4th June.

6. Blackbird: 72 flies and 51 *D. gallinulae*. Nest contained 3 young on 7th June and all were (presumed) fledged on the 15th.

7. Blackbird: 23 flies, 8 *D. gallinulae* and 22 *C. gallinae*. Eggs on 15th June, hatching on the 19th, 2 young on the 30th and both fledged on 5th July.

8. Robin: 29 flies, 3 *D. gallinulae*. 5 young on 9th June and all (presumed) fledged on the 19th.

Although there was no evidence of mortality in these cases, further investigation into the post-fledging survival of the birds

would be interesting, particularly if the nestling weights were also available.

DISCUSSION

In the Appendix are listed 351 nests of 46 species of birds which have been examined specifically for *Protocalliphora*. Of these, 61 nests (13 species) were affected, about 17% of the total. As already shown (Owen, 1954) hole-nesting birds and also those which build compact nests, seem to be particularly vulnerable, as compared with species which build open or flimsy nests. Infestation seems particularly heavy in the Paridæ and other hole-nesters, and low in species using open sites, such as the Turdidæ and many of the Fringillidæ. But there are some exceptions to this. For instance all 17 of the Swallows' nests contained *Protocalliphora*, but none of the 15 House Martins', 35 Swifts' or 13 Domestic Pigeons'. It has been suggested that the reason for heavy infestation of hole-nesting birds is that there is less chance of the larva falling out or being found by the parent birds and being removed, but it also seems likely, as suggested by Thomas (1936), that the larvae sometimes fall out of the more flimsy nests when ready to pupate, and when the nest is examined after the young have fledged, no parasites are found.

From the few nests examined it seems that nidifugous birds are not affected, which is to be expected, as *Protocalliphora* are essentially nest-parasites. But probably few people have caught and examined the young of these birds to see if the larvae are carried about.

The records given here again suggest that any resultant mortality among nestlings is most exceptional. The death of the brood of Spotted Flycatchers and of the two Starlings already mentioned, may have been caused by *Protocalliphora*, but other factors cannot be ruled out. The number of parasites to each nest is surprisingly variable, even within the same species of bird, and it is difficult to see why this should be so. There is also further evidence that *Protocalliphora* are unable to survive on dead nestlings. In the case of the Blue Tits which were killed by a predator, the larvae died.

As is to be expected almost all the records we have of *Protocalliphora* are from nests which have contained young birds. On the few occasions when flies were found in nests which had only reached the egg stage, it is to be presumed that they had not hatched from the nest, but were looking for somewhere to lay their eggs.

SUMMARY

1. Further records are given of the occurrence of parasitic dipterous flies, *Protocalliphora*, in the nests of 15 species of birds

in Britain, nine of which appear to be new host records.

2. The additional information again suggests that hole-nesters are more heavily infested than species using open sites, and also that mortality among the nestlings due to the presence of this fly is exceptional.

REFERENCES

- ARMSTRONG, E. A. (1953): "Nidicoles and parasites of the Wren." *Irish Nat. Journ.*, 11: 57-64.
 OWEN, D. F. (1954): "*Protocalliphora* in birds' nests". *Brit. Birds*, xlvii: 236-243.
 THOMAS, E. S. (1936): "Additional records of *Protocalliphora*." *Bird-Banding*, 7: 46-47.

APPENDIX—LIST OF NESTS EXAMINED FOR *Protocalliphora*

	Examined	Infested
Montagu's Harrier (<i>Circus pygargus</i>)	1	—
Partridge (<i>Perdix perdix</i>)	1	—
Coot (<i>Fulica atra</i>)	3	—
Moorhen (<i>Gallinula chloropus</i>)	1	—
Lapwing (<i>Vanellus vanellus</i>)	1	—
Domestic Pigeon (<i>Columba livia</i>)	13	—
Woodpigeon (<i>Columba palumbus</i>)	2	—
Little Owl (<i>Athene noctua</i>)	1	1
Swift (<i>Apus apus</i>)	35	—
Kingfisher (<i>Alcedo atthis</i>)	1	—
Great Spotted Woodpecker (<i>Dendrocopos major</i>)	1	—
Woodlark (<i>Lullula arborea</i>)	6	1
Skylark (<i>Alauda arvensis</i>)	2	—
Swallow (<i>Hirundo rustica</i>)	17	17
House Martin (<i>Delichon urbica</i>)	15	—
Sand Martin (<i>Riparia riparia</i>)	15	—
Carrion Crow (<i>Corvus corone</i>)	2	—
Magpie (<i>Pica pica</i>)	1	—
Jay (<i>Garrulus glandarius</i>)	1	—
Great Tit (<i>Parus major</i>)	33	18
Blue Tit (<i>Parus caeruleus</i>)	20	7
Coal Tit (<i>Parus ater</i>)	1	—
Marsh Tit (<i>Parus palustris</i>)	2	1
Long-tailed Tit (<i>Aegithalos caudatus</i>)	5	—
Nuthatch (<i>Sitta europaea</i>)	1	1
Treecreeper (<i>Certhia familiaris</i>)	3	—
Wren (<i>Troglodytes troglodytes</i>)	11	5
Song Thrush (<i>Turdus philomelos</i>)	38	2
Blackbird (<i>Turdus merula</i>)	47	5
Wheatear (<i>Enanthe aenanthæ</i>)	2	—
Redstart (<i>Phœnicurus phœnicurus</i>)	1	—
Robin (<i>Erithacus rubecula</i>)	2	—
Reed Warbler (<i>Acrocephalus scirpaceus</i>)	2	—
Willow Warbler (<i>Phylloscopus trochilus</i>)	2	1
Spotted Flycatcher (<i>Muscicapa striata</i>)	5	—
Dunnock (<i>Prunella modularis</i>)	6	1
Meadow Pipit (<i>Anthus pratensis</i>)	16	—
Tree Pipit (<i>Anthus trivialis</i>)	2	—
Pied Wagtail (<i>Motacilla alba</i>)	3	—
Grey Wagtail (<i>Motacilla cinerea</i>)	1	—
Starling (<i>Sturnus vulgaris</i>)	4	1

Linnet (<i>Carduelis cannabina</i>)	2	--
Chaffinch (<i>Fringilla cœlebs</i>)	16	—
Yellowhammer (<i>Emberiza citrinella</i>)	1	—
Reed Bunting (<i>Emberiza schœniclus</i>)	1	—
House Sparrow (<i>Passer domesticus</i>)	5	—

Notes: (i) In this list, isolated records, such as some of those given earlier in the paper, have been omitted.

(ii) The nests were examined by J. S. Ash (105), J. Coulson (48) and J. K. Bates and D. F. Owen (198).

NOTES

The “Dungeness” ringing pliers.—Designed at Dungeness Bird Observatory to facilitate neat and quick ringing, the pliers shown on plate 31 have met with a good reception by many ringers and it is felt that those who have not yet tried them might be interested.

Two main features are incorporated—a device at the nose for pre-shaping size 1 rings (and 1a rings where these have to be used overlapped) and a series of holes for closing rings and smoothing down the overlap.

In the case of a No. 1 ring, the blank end is placed across the groove in the nose and the pliers closed (plate 31, upper). The resulting hook is placed on the tarsus of the bird and the ring may then be closed by rolling between the finger and thumb. The ring is finished-off by being placed in the smallest hole so that the extreme end of the overlap is well within the top or bottom half-circle. Closing the pliers right home (plate 31, lower) then causes the ring to coil up on itself to form a neat tube with the final figure just clear of the overlap.

These pliers may be obtained at a cost of 8/- (including postage) through the Secretary of the Dungeness Bird Observatory Committee, 6 Canute Road, Hastings, Sussex.

H. E. AXELL

Great Crested Grebe stabbing at Swallow.—On 7th September 1953 a Great Crested Grebe (*Podiceps cristatus*) on South Norwood Lake, London, was behaving in a very unusual manner. Every time a Swallow (*Hirundo rustica*) circled low over the surface near it, the grebe raised itself out of the water and stabbed towards it with its beak. This was repeated several times but, though it took place very near to the bank, I did not see the grebe actually touch a Swallow.

R. H. WINTERBOTTOM

Gannet with deformed mandible.—At the end of September 1953 a Gannet (*Sula bassana*) with a deformed bill was shot on the Duridge Bay shore near Morpeth, Northumberland. The lower mandible was perfectly straight, but the upper was curved right

round sideways so that it was nearly touching the eye. I saw the bird only an hour or two after it had been shot, and it seemed to me that it was well nourished and in good condition, apart from the fact that it had some oil upon it. The head, neck and shoulders were white, quite unmarked with brown feathers, but the rest of the upper-parts and wings were dark speckled with white; I estimated that the bird was past its first year and possibly past its second.

MARK FLANIGHAN

[Mr. Flanighan has kindly sent us the upper mandible of this bird. It is not only malformed in that it has curved sideways and back to form a U, but it is also considerably under normal size. The tip of the mandible is only 8 mm. from the base of the sheath. It was presumably either a congenital deformity or a very early injury, so that it seems remarkable that the bird can have reached full size in spite of it, and then obtained enough food to remain in reasonable condition.—EDS.]

Displacement-sleeping in the Bewick's Swan.—In view of the description of a "pseudo-sleeping" attitude as one in which the bill is placed in the scapulars but the eye kept open (K. E. L. Simmons and R. W. Crowe, *antea*, vol. xlv, pp. 405-410), it may be interesting to record that on 17th January 1954 in company with Mr. G. B. G. Benson, I observed similar behaviour in what was believed to be a family party of 2 adult and 3 immature Bewick's Swans (*Cygnus bewickii*). These birds had settled on a pool near Kessingland, Suffolk, and we gradually approached them under cover of a bank. We looked at the birds over the top of the bank at about 20 yards range, and at first they swam a few yards further away into the middle of the pool with necks stiffly erect. They then suddenly placed their heads in their scapulars, although their eyes remained wide open (one bird did close its eyes for a few seconds), with the exception of one bird which remained alert. They were somewhat restless, however, and their attitudes did not remain constant for more than a minute or so at a time. We regarded this activity as displacement-sleeping, stimulated by our close approach. Why the stimulus provided this low-intensity reaction is somewhat obscure, but it is possible that our careful approach was sufficiently quiet to avoid a stronger escape element making the birds move off. It is also possible that the birds were tired. Fatigue is not mentioned by Simmons and Crowe as a possible factor in the production of low-intensity reactions, and it would be interesting to know if this could be definitely shown to exist by other observations on newly-arrived migrants.

P. R. WESTALL

Asiatic Golden Plovers in Arabia.—In view of the interesting notes by Mr. H. G. Alexander on the characteristics of the Asiatic Golden Plover (*Charadrius dominicus fulvus*) in its winter-quarters

in India (*antea*, vol. xlvii, pp. 401-403), my experiences in Arabia seem worth describing. Golden Plovers have several times been mentioned from Aden, but, as Colonel R. Meinertzhagen says in *Birds of Arabia* (1954, p. 485), no specimens have been obtained. There has been doubt if they were *Ch. apricarius* (the European species) or *Ch. dominicus* (the Asiatic and American species). On the other hand, one specimen of *Charadrius dominicus fulvus* has been obtained at Muscat in East Arabia (Meinertzhagen, *loc. cit.*).

I watched one area of salt-pans at Aden with some regularity for nearly two years from March 1946. On 19th September I saw a new wader which I could not, at that time, identify for certain. It resembled a Golden Plover (*apricarius*, which I knew well) in its yellow-speckled upper-parts, pale buff superciliary stripes and uniform rump and wings. Under-parts were mottled dark brown.

However, I noted at the time that, "in size it was definitely less than" Grey Plovers (*Ch. squatarola*) near-by and the note was quite unfamiliar—a shrill, loud "ki-wee" or "tu-wee", the last syllable louder and higher pitched than the first. It was repeated about six times fairly rapidly upon flushing.

I could not find this bird on 22nd September, but on the 29th saw it or a similar bird in the same place. Under-parts were now whitish with some dark blotches on belly. I wrote, "underwing was seen to be not white but darker." Call was noted as "wu-deew" or "ku-dee".

On 6th October it could not be found, but I saw one on 13th October—" . . . there seemed to be no white beneath the wing"—and on 20th October. None was seen on 27th October or 7th November, but on 17th November there were three together in the original area. All were in winter plumage. I wrote: "No white seen beneath wings in flight. The build was slimmer than that of a Grey Plover near-by, and the size definitely a good deal smaller." This time, as Mr. Alexander suggests when the bird is not alone, the call was quite different: a quiet "eh'wuk".

I saw no more Golden Plovers on four visits in December and January, but there was one, again noted as "smaller than Grey Plover near-by" on 27th January 1947. I continued regular wader-watching in Aden till February 1948, but saw no more definite Golden Plovers.

However, I did meet the species again when I visited Masirah Island, which lies some 1,100 miles E.N.E. of Aden, near the entrance to the Persian Gulf, about 200 miles south of Muscat. I was there from 6th to 10th June and from 13th to 21st September 1947, and nearly every day searched the shore at the north end of the island, near the airfield, for waders. There was one Golden Plover on 8th June ("under-parts were pale, blotched blackish; no white showed beneath wing in flight"), one on 13th September (moulting from summer plumage), a different bird on 16th September (winter plumage), which obliged by lifting wings upon

alighting to reveal "quite unmistakable grey axillaries", and a last bird on 19th September.

Thus, of some half-dozen Golden Plovers seen on the Arabian coast there was no evidence to suggest the presence of *apricarius*, but everything pointed to their all being Asiatic birds. Furthermore, the diagnostic value of the disyllabic note is confirmed.

P. W. P. BROWNE

Pseudo-sleeping attitude of Snipe :—Kenneth Williamson's detailed account (*antea*, vol. xliii, pp. 1-4) of pseudo-sleeping by Oystercatchers (*Haematopus ostralegus*) as a reaction to human disturbance, prompts me to describe similar behaviour by a Snipe (*Capella gallinago*) on two occasions at Blagdon and Cheddar reservoirs, Somerset. Late one afternoon in March 1951, at the former reservoir, a Snipe was observed, from a distance of approximately fifty yards, feeding close to the water's edge amongst short, reedy grass, and as the writer had the advantage of a strong sun at his back so that the rays played directly upon the bird, it was thought worth while to see how near an approach could be made before the bird took flight. By walking slowly, step by step, for the next thirty minutes, in rather "creep-mouse" fashion, at least half the distance had been made before the Snipe showed any outward signs of alarm; it stopped feeding, then gradually squatted, appearing to press itself as close to the ground as possible. But not until a few more steps had been made was the pseudo-sleeping attitude adopted; the head was brought around and its long bill was laid down the whole length of the variegated upper-parts—even at such short distance the bird appeared almost invisible to the naked eye. Soon after, the bird departed in much alarm.

The second occurrence of this behaviour was in October of the same year. One Snipe, after being flushed from meadow-land, settled fairly quickly near a pond within the confines of Cheddar reservoir. I adopted the same method as described above and the bird assumed the pseudo-sleeping stance for just a short while prior to taking flight. It seems probable that this behaviour is common in the Snipe as indeed it may well be with most other waders.

BERNARD KING

Fear behaviour of Marsh Sandpiper.—On 27th October 1952, near Bulawayo, Southern Rhodesia, I observed a Marsh Sandpiper (*Tringa stagnatilis*) and a Wood Sandpiper (*Tringa glareola*) feeding together on the border of a small dam. I approached to within fifty feet behind cover, and then stood up in full view of both birds. They immediately stopped feeding, but did not fly away as I had expected. The Wood Sandpiper walked quickly away, but the Marsh Sandpiper, after taking a few hesitant steps, adopted a false-sleeping position with its bill tucked into its scapulars, and one eye fully open facing me. After a few minutes

I advanced a few steps nearer, and it moved six feet further away, but adopted the same position as before. I moved forward a second time, with exactly the same result; when I moved forward a third time, however, both birds flew across to the other side of the dam.

L. S. TAYLOR

[It is evident that displacement-sleeping is a widespread reaction among waders in particular and we shall not publish any more notes on the subject unless the observation concerned is of exceptional interest. Among the other records we have received apart from the above is one from Mr. Geoffrey L. Boyle: on 7th September 1953, near Laeock, Wiltshire, a Green Sandpiper (*Tringa ochropus*) adopted the false-sleeping attitude at his approach and remained in that position for 5-10 minutes before it resumed feeding.—EDS.]

Inappropriate nesting behaviour of Common Sandpiper.—On 1st August 1954 I visited a small reed-fringed pond at the foot of an overgrown refuse tip near Milton Creek in North Kent. After a cautious approach under cover, having seen nothing, I stepped into full view, only to discover a Common Sandpiper (*Tringa hypoleucos*) some six or seven yards away. Hurriedly concealing myself as best I could, I watched the bird move in an agitated manner to a patch of bare ground at the edge of the water no more than ten yards off. Here, in a small dip, the bird lent forward on its breast, and with a shuffling motion settled down as if on eggs. It then appeared to go to sleep. Several minutes later it looked about, got up, and walked a few feet to one side, only to return almost at once. It again went through the movements of settling down on eggs, first a little to one side of the hollow, and then finally in it. Soon afterwards, following a little preening and further inactivity, the bird disappeared when my attention was distracted. As this species has not been proved conclusively, by any competent ornithologist, to breed in Kent (James M. Harrison, *The Birds of Kent*, 1954), and bearing in mind the date, I was not surprised to find that the supposed nest was merely a shallow, unlined depression, probably of natural formation. Presumably the bird's behaviour was a complicated sequence of displacement activities, resulting from my sudden appearance.

PETER R. GRIFFITHS

Further notes on the feeding of Redshank and Spotted Redshank—Observations were made regularly in 1953 at Warren, Hampshire, on Redshanks (*Tringa totanus*) and Spotted Redshanks (*T. erythropus*) and in contrast to D. B. Peakall's note (*antea*, vol. xlii, p. 304), the following points may be of interest.

Redshank. In shallow, tide-less mud lagoons this species fed almost invariably with the water above the tarsus and not uncommonly up to the belly. On 27th December 1953 a single

bird while swimming up-ended six times in 10 minutes in the manner of a surface-feeding duck. The depth of the water was about 6 inches, and the bird stayed in the up-ending position for up to 2 seconds. The commonest method of feeding in these pools was with the head and neck submerged while the bird waded about erratically. The head was usually submerged for up to 8 seconds, the bird progressing during this time some three to four yards. These notes are an interesting comparison to Peakall's observations, for he apparently saw no Redshanks with the water above the tarsus; the up-ending appears to be exceptional.

Spotted Redshank. Whereas Redshank commonly feed on tidal mud creeks, in the region of the Beaulieu estuary the Spotted Redshank has only been observed on the lagoons. It was common to see this species swimming, but no up-ending was noted. The usual method of feeding is by wading belly-deep with head and neck submerged, in the same way as the Redshank. On one occasion a bird was seen to wade about ankle-deep, sweeping the bill from side to side rather after the manner of an Avocet (*Recurvirostra avosetta*). Spotted Redshank on the whole feed more regularly in deeper water than Redshank.

GRAHAM BUNDY and GERALD KINSEY

Threat display of Green Woodpecker.—On 11th January 1955 at 4.15 p.m. at The Lee, Gt. Missenden, Buckinghamshire, a Green Woodpecker (*Picus viridis*) flew up from the ground on to an ash tree often used for nesting. I was standing at a gate near-by, and when the bird noticed me it flew on to the nearest branch (about 20 yards away) and proceeded to swing its head, neck and body from side to side in a regular pendulum-like motion, lowering its head in the middle of each swing. As it moved its head it stared, or rather glared, with the left eye and then the right eye, alternately, and when staring uttered three calls—"ha-ha-ha." This occurred seven or eight times, then the bird flew to below an old nesting-hole and went to roost.

This appears to be a threat-display, but also very much resembles that described by D. W. Snow and A. W. G. Manning in their account of courtship-display (*antea*, vol. xlvii, p. 355).

SUSAN COWDY

Great Tit hopping up and down vertical tree trunk.—On 16th April 1952 at Gosforth Park, Northumberland, a Great Tit (*Parus major*) was seen to hop from the ground on to the rough bole of a silver birch. It then moved jerkily up the trunk, stopping once to peck at something in the bark. After climbing about four feet it disappeared round the other side and when next seen it was moving vertically downwards head first, in which manner it arrived back on the ground. The bird was not seen to derive any support from its tail.

W. D. RYDER

Nesting material carried by both of a pair of Robins.—In view of the statements in D. Lack's *The Life of the Robin* (1943, p. 81) that in the Robin (*Erithacus rubecula*) "only the hen builds, and that rarely a cock was seen to pick up a piece of nesting material, but usually he dropped it again soon afterwards", it seems worth placing the following on record. On 1st March 1952, two Robins were observed near a nest-box three yards from our French windows at Thame, Oxfordshire. One flew to the box with a fairly long stalk of Michaelmas daisy and while this was wagging about conspicuously in being manoeuvred into the box, the other Robin was on the ground with a dead leaf in its beak. This Robin then flew with the leaf into the box. The first egg was laid on 17th March.

On 14th March 1955, two colour-ringed Robins were again seen near the same nest-box, which has two tiers. The male took a leaf into the bottom box and the female took a leaf into the top box. The male then appeared at the entrance with the leaf still in its beak but returned into the box. This appearance with leaf in beak was repeated a second and third time before the leaf was finally left in the box. As in 1952, this occurred at the very beginning of the nest building.

R. G. FRANKUM

Leg and bill colouration in the Grasshopper Warbler.—Mr. H. Duggan, Principal Keeper on Tuskar Lighthouse, Co. Wexford, has drawn my attention to the fact that the legs of Grasshopper Warblers (*Locustella naevia*) examined shortly after the birds were killed against the lantern in autumn, were pinkish or pinkish-white. As Mr. Duggan points out, this colour differs from the pale yellowish-brown given in *The Handbook*.

Accordingly the leg colour of Grasshopper Warblers trapped at Saltee in the spring of 1954 was carefully noted. Six were trapped in May, the leg colour being described as follows: pinkish-flesh, 3; bluish-flesh, 1; pale yellowish-flesh, 1; pale flesh, 1. In no case was there any indication of brown. Two birds observed in the field under excellent conditions were seen to have pinkish-flesh legs.

In 5 of the 6 birds mentioned above, the bill colour was particularly noted: the lower mandible was bluish-grey in two cases, creamy in two, and creamy tinged with yellow in one. *The Handbook* gives the colour as pale yellowish-brown.

Perhaps these differences from the colour of the soft parts as given in *The Handbook* are due to the skins from which the description was taken not being fresh. It seems worth recording the colours found in freshly killed and living birds.

ROBERT F. RUTTLEDGE

[Kenneth Williamson and J. F. Anton have already drawn attention (*Scot. Nat.*, vol. 60, p. 130) to this error in *The Handbook*, though their remarks are based primarily upon one bird in

which they noted the colour of the legs and feet as "a delicate pink." They also refer to an earlier description by Arthur B. Duncan of a bird trapped in 1938 of which the legs were described as "shrimp-pink". Workers at other observatories have, we understand, found the same, as did Dr. C. Suffern with a bird that he was able to watch at close range in Hampshire in May 1954. The need for careful checking against living birds of *The Handbook* descriptions of soft parts cannot be over-emphasised.—
Eds.]

BOOK REVIEWS

THE POCKET GUIDE TO NESTS AND EGGS. By R. S. R. FITTER, assisted by the HON. GUY CHARTERIS. Illustrated by R. A. RICHARDSON. (*Collins*, London, 1955). xvi and 172 pages. 48 plates (40 in colour). 21s.

THIS companion volume to the same author's *Pocket Guide to British Birds* is arranged on a similar system, based on division of all species first according to an arbitrary grouping under "Land," "Waterside" or "Water" and then by size. The finder of three neighbouring nests on moorland such as a Curlew's, a Black-headed Gull's and a Red Grouse's will no doubt with sufficient diligence eventually discover the right answers under "Waterside Birds; Long", "Water Birds; Medium" and "Land Birds; Medium", but we still think that if anything can convince the ordinary bird-watcher that there are even worse fates than having to learn the "Wetmore" order, this is it.

Like its predecessor this book contains many admirable features and much valuable information and will no doubt be widely used, yet it contains too many faults which could easily have been avoided and which make it dissatisfying to a critical user. Unfortunately these concern the illustrations as well as the text. In order to conform to the arbitrary scheme birds which nest in different situations have to be figured more than once in colour, and it is perhaps partly through trying to do too much in this way that the standard falls disappointingly below that of the first volume, especially in the use of crude and violent reds as in the Robin, Redwing and Yellowhammer, and in the smudginess which robs the divers and the Avocet of their beauty. Indeed, some of the cigarette cards of around forty years ago did better justice to a number of nesting birds than some of these plates. While the fault appears to be largely in the design and production it is sad to see the work of so talented an illustrator as Mr. Richardson forced into so cramped and mass-produced a mould.

In the text the distribution notes contain some curiously misleading statements, such as that the Wryneck breeds "very sparsely N. to Yorks. and W. to Devon" while on the other hand the Common Sandpiper is not shown as breeding at all in W. England, and it is surprising to find no mention of Suffolk among counties where the Sandwich Tern breeds. In general the

tendency is to give an over-optimistic view of the prospects of encountering a number of the less common species, from Merlins and Stonechats to Egyptian Goose and Collared Turtle Dove (Eastern Collared Dove), which last it seems unnecessary to have included at all.

The descriptions of nests and nest-sites are brief and in many cases excellent, but here again there are some disappointing features. The Black-headed and Common Gulls, for instance, are both given as nesting colonially, but there is nothing to indicate that in the latter case the "colony" so infrequently exceeds a couple of dozen pairs while in the former it may run to hundreds or even thousands, or that the Common Gull has so marked a preference for nesting on islets.

Useful information is also given about bird-ringing and nest-boxes and there are keys to egg colour, egg shape, nestling features, nest-sites, construction and materials and colonial and social nesting which will prove valuable for reference. E.M.N.

LETTERS

AMERICAN LAND-BIRDS IN WESTERN EUROPE

SIRS,—I should like to offer brief comments on the fine paper on "American land birds in western Europe" in the January issue (*antea*, pp. 1-14). It seems to me that it may overstate the valid point that reports of transatlantic vagrants of certain species must be regarded with special caution because the species are considered non-migratory. The fact that a species occupies much the same range winter and summer may obscure complete or partial abandonment of the northern fringe of the range in winter in some species, or noticeable movements of a small minority of individuals in the remainder.

Taking the species described by Messrs. W. B. Alexander and R. S. R. Fitter in order, it is of interest that much of the substantial migratory movement of Bald Eagles (*Haliaeetus leucocephalus*) in eastern North America represents birds of the southern race (*H. l. leucocephalus*), as shown by the banding of young in Florida (Broley, 1947) with recoveries as far north as four Canadian provinces.

Even as sedentary a bird as the Bob-white (*Colinus virginianus*) has been known to make short migrations, but the recorded introductions of the species would be enough to account for British reports.

While the Screech Owl (*Otus asio*) is one of the most sedentary of all owls, the relatively small number banded has produced at least three recoveries showing movement: of 200 miles and nearly 100 miles (Bent, 1938) and 140 miles (Cooke, 1943), while some winter wandering is believed to occur (Palmer, 1949, referring to Maine).

The Hairy Woodpecker (*Dendrocopos villosus*) is not regularly migratory, but wanders to some extent in winter, and, like the Downy Woodpecker (*D. pubescens*), shows a definite wave of southward migration in late October and early November (Bent, 1939). Its movements are illustrated by the winter reports of the northern race (*D. v. septentrionalis*), for which there appear to be no definite breeding-records in New England. Nevertheless, there appear to be at least nine winter records in Maine (Palmer), and three in Massachusetts—of migrants from eastern Canada. The Downy Woodpecker is even less migratory than its larger relative, but some movement does occur.

The Mockingbird (*Mimus polyglottos*) tends to be sedentary, but evidences some short migratory movements even in the southern United States (Bent, 1948). In Maine early reports were ascribed to cage-birds, but by 1947 there were reports of at least 80 individuals, largely in the colder half of the year, and the species was suspected of breeding locally, with local seasonal movements (Palmer).

While the percentage of individuals of these species undertaking any seasonal movement may be small, such movements do lend support to the thesis that the western European reports represent vagrants and not escaped cage-birds.

Incidentally, should not the list have included Snow Bunting (*Plectrophenax nivalis*)? A large flock of small birds landed on a ship 20 miles from Iceland about 18th April 1941, identified by the fact one (an adult female of this species—presumably *P. n. nivalis*) had been banded in Dutchess County, N.Y., on 20th January 1941 (Cooke, 1945).

E. ALEXANDER BERGSTROM

REFERENCES

- BENT, A. C. (1938): *Life Histories of North American Birds of Prey* (Part 2). U.S. Nat. Mus. Bull. 170.
 ——— (1939): *Life Histories of North American Woodpeckers*. U.S. Nat. Mus. Bull. 174.
 ——— (1948): *Life Histories of North American Nuthatches, Wrens, Thrashers and their Allies*. U.S. Nat. Mus. Bull. 195.
 BROLEY, C. L. (1947): "Migration and nesting of Florida Bald Eagles". *Wilson Bull.*, 50: 3-20.
 COOKE, M. T. (1943): "Returns from banded birds: some miscellaneous recoveries of interest." *Bird-Banding*, 14: 67-74.
 ——— (1945): "Transoceanic recoveries of banded birds." *Bird-Banding*, 16: 123-129.
 PALMER, R. S. (1949): *Maine Birds*. Bull. Mus. Comp. Zool., vol. 102.

[With regard to the Snow Buntings Mr. R. S. R. Fitter points out that this species is barred from inclusion in the main list of American land-birds that have occurred in Europe by the fact that it breeds in Greenland; there is no reason to suppose that the bird ringed in New York had made a direct crossing of the Atlantic.—

Eds.]

THE COLLECTION OF BIRD ECTOPARASITES AT THE
BIRD OBSERVATORIES

SIRS,—In 1936 I made an appeal to ornithologists who were engaged in bird-ringing to collect ectoparasites from living birds. The response was quite good, but unfortunately during the war years I lost touch with many of the people who kindly collected material. With the establishment of a number of bird observatories around the coast the opportunity for more systematic collecting of ectoparasites became a more practical proposition and I feel the time has come for some general remarks of appreciation to be placed on record. The interest and enthusiasm of Mr. Kenneth Williamson, who saw the tremendous potentialities in this field must certainly be mentioned. He has placed the whole technique of collecting ectoparasites on an organised basis and reference to the Fair Isle bulletins shows how much has been achieved. However, the majority of the other bird observatories have also played their part and I have encouraged them to follow a number of lines of investigation with the result that during 1954 a record amount of material was collected. As a result of this new trend in the study of ectoparasites we have learned a great deal. I need only mention the extent to which fleas are carried on birds' bodies, the considerable part played by certain birds as hosts of the intermediate stages of the sheep tick and the degree of infestation by bird-flies as examples of completely new aspects of the parasitological problems which have come to light. In addition a few parasites have been discovered which are new to science and many new records extending the distribution of known species have been added. There is still much to be done, but the foundations have been laid. It is realised that the collection of ectoparasites must be secondary to the task of ringing but it is to be hoped that more people will be willing to help in the future.

I understand, however, that members of some observatory staffs have recently become alarmed at the possibility of certain parasites, especially bird-fleas and bird-flies, transferring from one bird to another during the trapping and examination and they now feel their collections may be quite useless. I would like, therefore, to reassure them. Although I admit the dangers of transfer I feel they should not be exaggerated. In the case of bird-fleas and bird-flies the information which is accumulating from observatory collections is considerable and the possibility of some transfers taking place need not detract from the value of such collections. In the case of ticks which are invariably found firmly attached to the heads of birds the question of transfer is not likely to arise. The risk of transfer in the case of lice is very small and in the hands of experts can be easily detected.

May I, therefore, pay tribute to the excellent work of the staff at Fair Isle observatory, Mr. Peter Davis at Skokholm, Miss

Barbara Whitaker at Lundy, Mr. A. E. Smith at Gibraltar Point, Mr. A. Till at Bardsey and Dr. E. A. R. Ennion at Monks' House, all of whom contributed towards making 1954 a record season. Mr. Williamson deals with the greater part of the Fair Isle material and the remainder is forwarded to me. I am hoping to summarize various sections of the work in due course.

13 Braybrooke Road, Church End,
Cherry Hinton, Cambridge.

GORDON B. THOMPSON

PROPOSED NEW "BIRDS OF DEVON"

SIRS,—I am collecting information for a book on the birds of Devon and should be very grateful if any of your readers would send me unpublished records and notes on breeding and distribution of all but the commonest species in the county during the present century. The last book on the subject, for the whole county, was W. S. M. D'Urban and Rev. M. A. Mathew's *Birds of Devon*, second edition, published in 1895. Breeding records are particularly required.

All information will be gratefully received and, in the event of publication, will be fully acknowledged. It should please be sent to me at 6, Grove House, Topsham, Devon.

R. F. MOORE

REQUESTS FOR INFORMATION

Delayed departure of summer-visitors in 1954 and wintering of waders in 1954/55.—It is evident from reports we have received and from preliminary enquiries made by Mr. J. A. G. Barnes, that some summer visitors, notably terns and Hirundines but also other species as well, delayed their departure from the British Isles in autumn 1954 and there were a number of very late records. At the same time certain passage waders, particularly Ruff (*Philomachus pugnax*), Spotted Redshank (*Tringa erythropus*), and Avocet (*Recurvirostra avosetta*), among others, were recorded throughout the winter in a number of localities. It is known that these species have been spending the winter in the British Isles more frequently in recent years, and probably the numbers during the past winter merely represented an increase on what is a comparatively recent but now regular habit. Mr. J. A. G. Barnes is collecting records, both of late summer visitors and of wintering waders, and would be very grateful for any which have not *already* been sent to Editors of County Reports. Information on the development of the wintering of these species of waders would also be welcomed. Records should be sent to Mr. J. A. G. Barnes at Earnseat, Arnside, Westmorland, via Carnforth, Lancashire. In the event of publication full acknowledgement will be made.

Unusual numbers of Short-eared Owls and other birds of prey.—In N. Kent and to a lesser extent in Essex there have during the past year been unusual numbers of Short-eared Owls (*Asio flammeus*). In Kent at least this has been associated with a vole plague, and other birds of prey—Kestrels (*Falco tinnunculus*) and Hen Harriers (*Circus cyaneus*)—have been involved. A short paper on these birds in N. Kent will be appearing in *The Kent Bird Report* for 1954, but as a few reports received from other areas suggest that the "invasion" may be of wider application we feel that any evidence of increased numbers of these predators should be collected together. Readers are asked to send records to E. H. Gillham, 99 Hillcrest Road, Orpington, Kent. In the event of publication full acknowledgement will be made.

NOTICE TO CONTRIBUTORS

British Birds publishes material dealing with original observations on the birds of Britain and Western Europe, or where appropriate, on birds of this area as observed in other parts of their range. Except for records of rarities, Papers and Notes are normally accepted only on condition that the material is not being offered to any other journal. Photographs (glossy prints showing good contrast) and sketches are welcomed. Proofs of all contributions accepted are sent to authors before publication. After publication 20 separates of Papers are sent free to authors; additional copies, for which a charge is made, can be provided if ordered when the proofs are returned.

Contributors are asked to observe the following points, attention to which saves the waste of much editorial time on trivial alterations:

1. Papers should be typewritten with double spacing, and on one side of the sheet only. Shorter contributions, if not typed, must be clearly written and with similar spacing. Failure to help in this way may result in delays to publication.

2. Notes should be worded as concisely as possible, and drawn up in the form in which they will be printed, with signature in block capitals and the writer's address clearly written on the same sheet. If more than one Note is submitted, each should be on a separate sheet, with signature and address repeated. In the case of rarity records, any supporting description which is too detailed for publication should be attached separately.

3. Certain conventions of style and lay-out are essential to preserve the uniformity of any publication. Authors of Papers in particular, especially of those containing Systematic Lists, Reference Lists, Tables, etc. should consult the ones in this issue as a guide to general presentation. English names of species should have capital initials for each word, except after a hyphen (e.g. Siberian Thrush, Yellow-headed Wagtail), but group terms should not (e.g. thrushes, wagtails). English names are those used in *The Handbook of British Birds*, with the exception of the changes listed in *British Birds* in 1953 (vol. xlv, pp. 2-3). The scientific name of each species should be given (in brackets and underlined) immediately after the first mention of the English name. Sub-specific names should not be used except where they are relevant to the discussion. It is sometimes more convenient to list scientific names in an appendix. Dates should take the form "1st January 1955" and no other, except in Tables where they may be abbreviated to "1st Jan.", "Jan. 1st", or even "Jan. 1", whichever most suits the lay-out of the Table concerned. It is particularly requested that authors should pay attention to Reference Lists, which otherwise cause much unnecessary work. These should take the following form:

TUCKER, B. W. (1949): "Species and subspecies: a review for general ornithologists." *Brit. Birds*, xlii: 129-134.

WITHERBY, H. F. (1894): *Forest Birds: Their Haunts and Habits*. London. p.434.

Various other conventions concerning references, including their use in the text, should be noted by consulting previous examples.

4. Tables should be numbered with Roman numerals, and the title typed above in the style used in this issue. The title and any headings within the Table should not be underlined, because this sometimes makes it difficult for the Editor to indicate the type to be used. It is most important that the lay-out of each Table should be carefully planned with an eye to its final appearance; above all, it should be borne in mind that Tables must either fit into the width of a page, or be designed to fit a whole page lengthways. All Tables should be self-explanatory.

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Cover photograph by G. K. Yeates: Flamingoes (*Phoenicopterus ruber*), south France.



BRITISH BIRDS

THERMAL AIR CURRENTS AND THEIR USE IN BIRD-FLIGHT

By G. H. FORSTER, B.Sc., A.F.R.A.E.S.

RECENT discussions and publications on the influence of the weather on the movements of birds have led the author to consider the relation between weather and bird-flight. The effects of drift due to wind on the migrating bird have been made well known by the work of Williamson (1952, etc.) and others, and this shows that birds are, to a certain extent, at the mercy of the currents in the air. Consideration has, therefore, been given to the various types of air-current that are known to exist, and the following paper deals with the possible effects that these air-currents might have. It is pointed out that the conclusions which follow are mainly theoretical and have little substantive evidence to support them. It is hoped, however, that sufficient interest will be created by these ideas to stimulate observations to find out how far they may be justified.

The author wishes to acknowledge with gratitude the comments received from Messrs. C. A. Norris, Kenneth Williamson, H. A. Craw, P. A. D. Hollom and I. J. Ferguson-Lees on the original draft, as a result of which some alterations have been made.

Bird-flight can take three forms, viz:

1. Flapping.
2. Gliding.
3. Alternate Flap/Glide undulating flight.

It will also be found that a particular species falls mainly into one of them, e.g. Golden Plover (*Charadrius apricarius*) in (1), Buzzard (*Buteo buteo*) in (2), and Woodpeckers (*Piciformes*) in (3). The gliders generally are those of low wing-loading and the flappers are either highly loaded or fast of flight. The flap is used to obtain forward thrust and therefore the flappers use more energy than the gliders who use gravity to obtain the forward thrust.

When airborne the bird is part of the mass of air which contains it, and its flight is in relation to the air and bears no relation whatsoever to the ground below. The drift of the air carries the bird

with it and the bird is able to ascertain this drift only by its senses of sight or possibly sound (Fig. 1.).

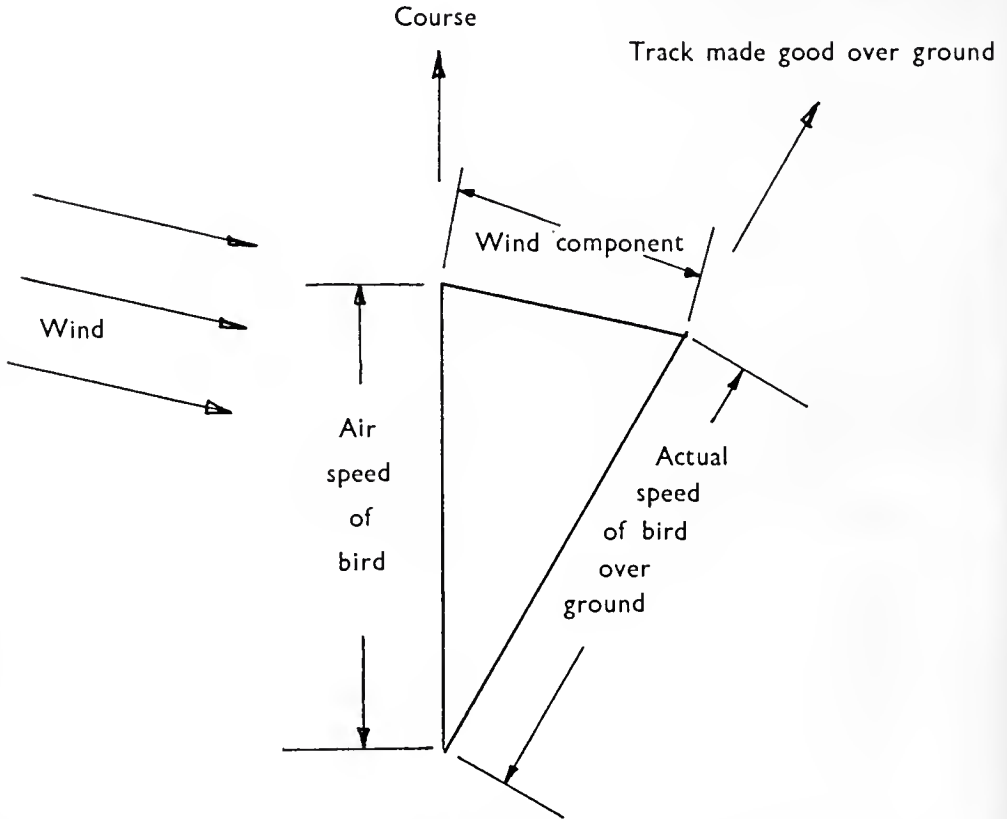


FIG. 1—DRIFT. THE VECTOR DIAGRAM SHOWS THE EFFECT OF WIND. THE COURSE THAT IS STEERED IS NOT THE TRACK MADE GOOD OVER THE GROUND.

No matter what form the bird-flight takes, however, the bird is, in addition, at the mercy of any upward or downward air-currents. The upward currents can be used to maintain the bird at an altitude and the downward currents are a nuisance inasmuch as they tend to make the bird lose height.

Mankind is now making use of the upward currents and gliding flights in motorless gliders are now being undertaken, often over distances of 40/50 miles and at varying altitudes of up to 15,000 ft. The art of observing and feeling ascending currents has reached such a state that pilots can name their destinations and get there—even in some cases progressing against the wind.

The development of these techniques throws a new light on the performances of birds in their long distance flights. Birds, being small, are able to turn in small circles, thereby staying in an uprising current for much longer times than a glider and they can therefore make better use of the available currents than mankind.

It is likely that birds are able to detect the changing currents and no doubt as the birds gain in flying experience so will they gain in efficiency in making use of such natural benefits. Anyone who has watched a Golden Eagle (*Aquila chrysaëtos*), Buzzard, or

even a Rook (*Corvus frugilegus*) making use of uprising currents induced by a hillside or trees, will have noticed that the amount of flapping required to remain airborne is relatively small, and in the case of the first species it might even be absent for long periods.

Uprising air-currents take three forms: (1) thermals, (2) slopes and eddies, (3) standing waves. The first are caused by heat—hot air rises due to its lower density and the colder air moves inward to fill its place. The second are caused by the contours of the ground or sea over which the body of air is passing. The third are also caused initially by the contours of the ground, but also depend on the temperature and wind gradients in the atmosphere.

Any combination may occur and very strong currents result.

The following gives a brief description of the formation of, and effects of climatic conditions on the thermal.

The main source of heat is the radiation of the sun, and therefore a gradual diminishing of the heat in the air takes place as the sun sets. This heat is radiated either into space, where it may be reflected by clouds back to the earth or sea, or conducted or convected into the surrounding atmosphere. As the heat is lost the air becomes more and more stable as the hot and cold air mixes and diffuses into a more or less homogeneous mixture. Just before sunrise the atmosphere has taken on its most homogeneous aspect and measurement of the air-temperature will show an even fall of temperature with height or the presence of an inversion. Few thermal air-currents will exist and the atmosphere is most unsuitable for soaring.

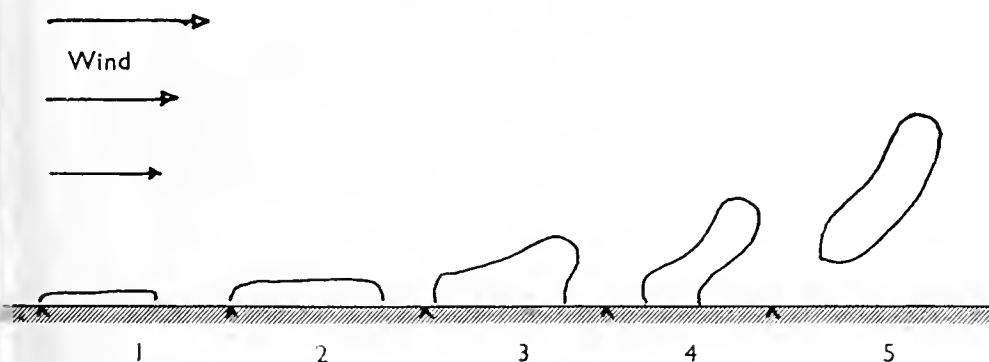


FIG. 2—SUCCESSIVE STAGES IN THE BREAKAWAY OF A THERMAL BUBBLE.

As soon as the sun strikes the atmosphere, however, the radiation begins to heat the air. If the atmosphere is homogeneous in its composition of air and water vapour etc., then the radiation will cause the temperature to rise evenly and no air currents will result as there would be no change in pressure. To start thermal currents, therefore, there must be a discontinuity in the rate at which the air is being heated. Such discontinuity is caused when the sun begins to irradiate a piece of rock or stretch of sand or gravel or town or quarry which is of a different thermal capacity from the countryside around. The ground-temperature

risers more quickly than that of the air and provides a radiating surface which is in contact with the air, and in turn the air begins to gain in temperature locally. When the air is sufficiently hot it begins to rise and forms a layer of varying depth. - This layer grows until it is large enough to break away in the form of a large bubble (Fig. 2). This bubble continues to rise in the atmosphere until it has either lost all its heat by radiation and intermixing or it reaches a layer of warmer air again. Layers of warmer than normal air may exist at any altitude as can be seen by the inversion of the temperature on a temp./altitude curve (Fig. 3). Such

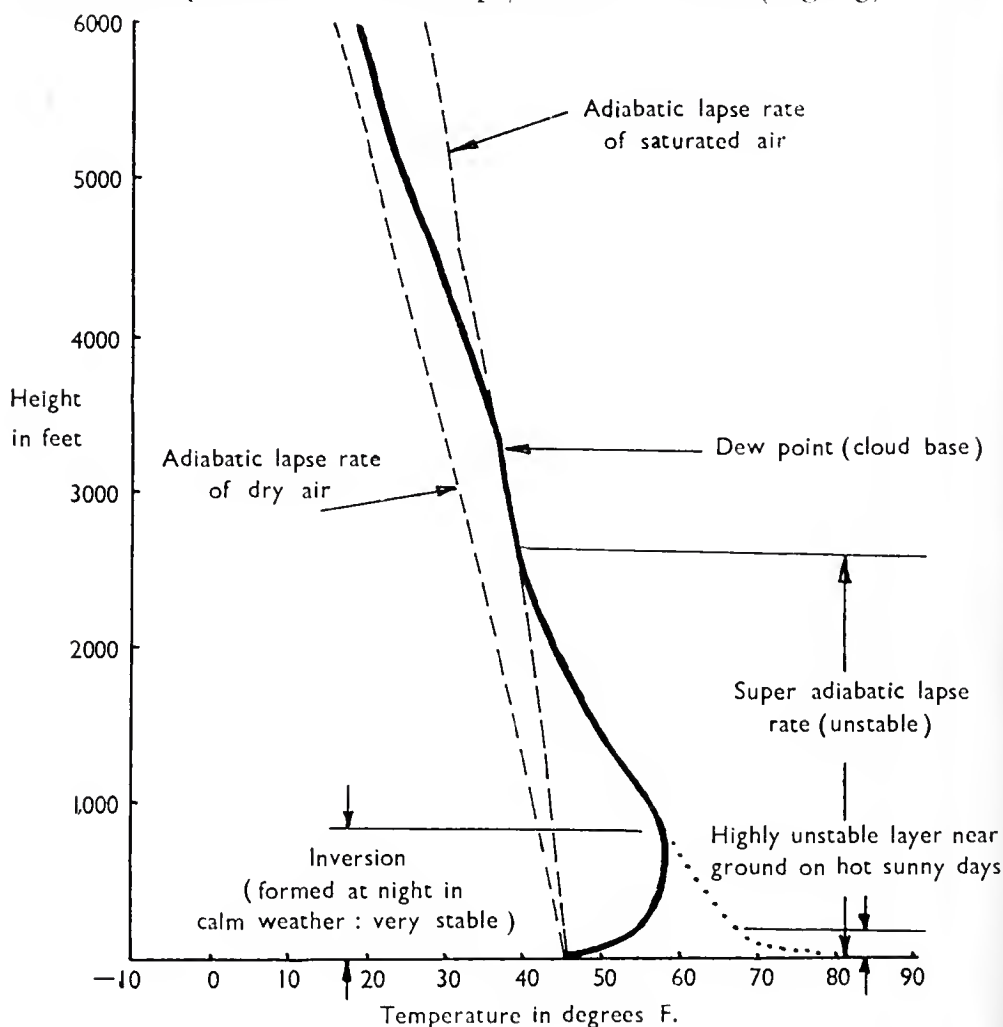


FIG. 3—VARIATION OF TEMPERATURE WITH HEIGHT.

The change in temperature during an adiabatic expansion is due solely to the expansion of the gas and no heat is supplied by, or lost to the surrounding atmosphere.

temperature inversions can be spotted by an observer on occasion. One may see the smoke from a chimney rise to a certain height and then level off as it can get no higher, or the clouds may appear to have flat tops (Fig. 4). In addition, if an inversion exists over a smoky town the smoke is unable to ascend and the atmosphere becomes murky and eventually ends up as "smog". If the upper

layer of air is warmer than the lower it will not be possible for thermal currents to grow and therefore little or no gliding can take place. The few observations on flying birds that I have made under such conditions show that only flapping flights appear to be

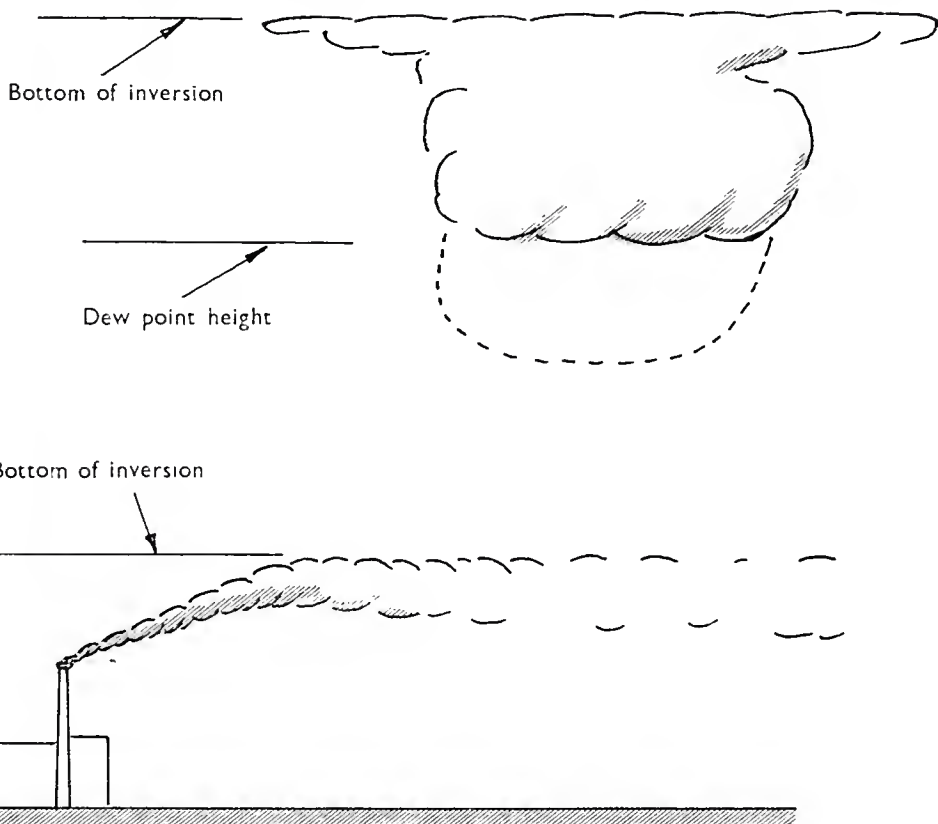


FIG. 4—VISUAL EVIDENCE OF AN INVERSION.

taking place except for glides during which height is lost. Slope-gliding is, of course, still possible.

The thermal bubbles can be observed in many instances. As the air in them contains water vapour and the bubble cools adiabatically on ascent, the bubble will eventually reach a height where the dew point is reached and the vapour will come out as visible particles to form a cloud (Fig. 5). Such clouds can be seen to be forming $1\frac{1}{2}$ to 3 hours after sunrise and larger ones develop as the day progresses. They are the Cumulus clouds (Cu.) which form such an integral part of the English summer landscape. If their development is unrestricted they build up into Cumulo/Nimbus thunderclouds of immense proportions and altitudes and containing vast ascending currents. The Cu. cloud forms the basis of modern gliding techniques as under and inside each growing Cu. is an uprising current.

Further observations show that Cu. clouds tend to emanate from one place because air bubbles tend to rise off one stretch of ground, and be carried downwind (Fig. 5). As a result long lanes of Cu.

clouds may be observed with parallel spaces of clear sky running in the direction of the wind. These fine weather Cu. clouds grow and disappear in a relatively short time, the average life of each being about 20 minutes.

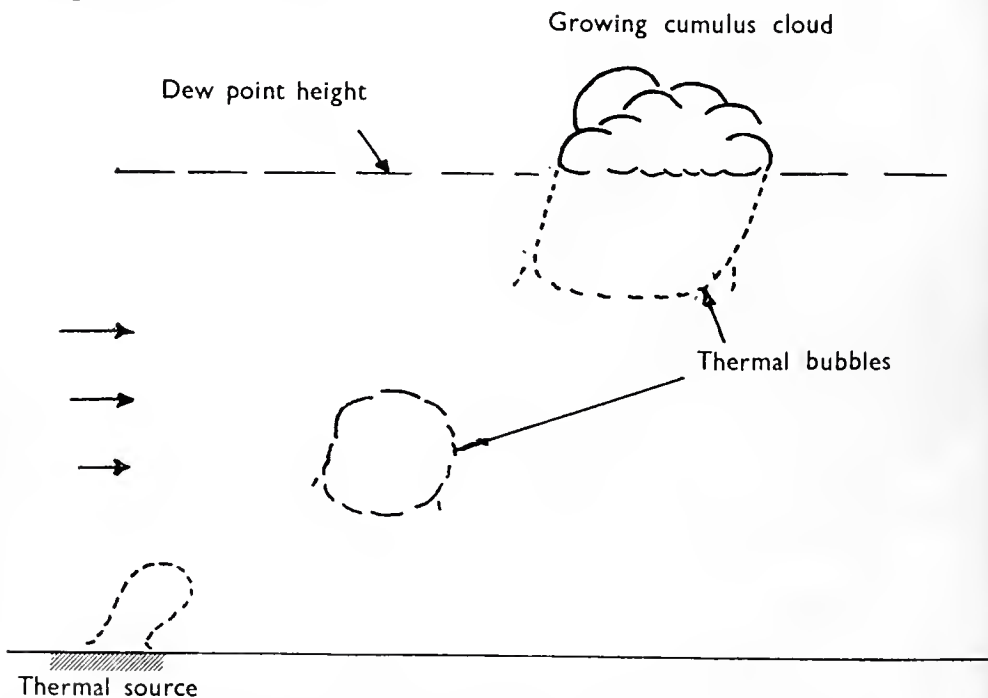


FIG. 5—CLOUD BASE IS AT DEW POINT HEIGHT. THERMAL BUBBLES DRIFT DOWNWIND AND CLOUD GROWS ON UPWIND SIDE AND EVAPORATES ON DOWNWIND SIDE.

The rate of growth and decay of the fine weather Cu. Cloud is an invaluable indication to the presence of thermals. This fact is now used by the glider pilot whose practice is to achieve lift by flying from Cu. to Cu., circling to gain height under a growing Cu. and losing it again on the passage to the next. It is in this manner that long cross-country flights are made without power, the normal altitude being 4,000 ft. to 5,000 ft.

Various factors affect the creation of thermals and the following three sections form a resumé of the effects of these factors.

(I) TIME OF DAY

Under light wind conditions thermals begin to grow immediately after sunrise although generally an hour or so is necessary to create large enough thermals to reach the height at which cumulus will be formed. Small thermals are, however, very rapidly created which eventually intermingle to create the larger thermals which end in cumulus clouds.

After midday the sun's insolation is lessening and from then on the earth's surface is beginning to cool. The local air also becomes cooler and relatively heavy. It clings to the ground and resists being carried up by the turbulence to mix with the higher layers and this means that on a calm day a temperature inversion is

forming. Thermals may continue to be active above the inversion, however, and soaring flight can take place, although below the inversion height bird-flight is likely to be confined to flapping. During the night the inversion will grow until its maximum height is reached just before sunrise.

When a strong wind is in action the turbulence tends to mix the air resulting in the effects of an inversion being much less noticeable, although still present. The heavier air requires more energy to mix it and the wind tends to drop as night progresses.

Over water the conditions are likely to be totally different due to the heat capacity of the water which continues to heat the air during the night. It might then be that thermals and slope currents caused by waves are at a maximum by night and bird-flight would then be more intense at night. Strong sun might, however, make good thermals over the sea by day.

All the above is subject to the sun being allowed to heat the earth's surface. Cloud cover can, of course, annul the conditions.

(2) EFFECT OF LOCALITY

A change from one type of soil or vegetation to another appears to tend to cause thermal growth. Thermals therefore tend to grow near lines of demarcation. The best example is the sea-shore. Consider the sea cold and the shore warm causing a sea breeze to landward. Thermals would grow some distance from the water's edge—a few hundred feet or less and birds would then tend to fly along this line. At night the breeze would be seawards and the thermals would be rising some distance out to sea and the birds would then tend to fly along that line (Fig. 6). Rivers and estuaries would also prove good sources of thermals in a similar manner and in cases of sudden cold weather their heat reservoir

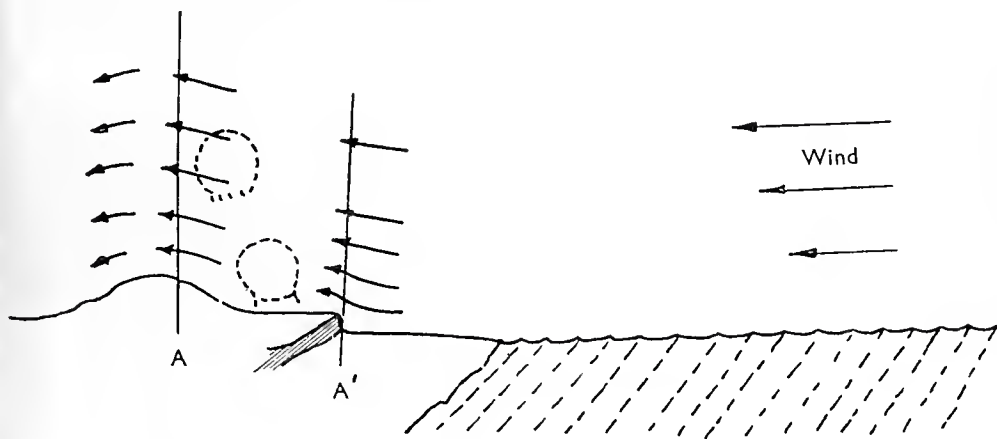


FIG. 6—SLOPE-CURRENTS INDUCED BY SEASHORE AND SAND DUNES. THERMAL CURRENTS MAY START BETWEEN A AND A' DUE TO EFFECT OF HOT SAND.

effect might even provide very local flying conditions which would restrict flight to their immediate vicinity (Fig. 7).

The effect of slope is the main function of locality. The sea-shore

should again be considered. If the wind is on-shore then there will be a considerable slope-current whose presence might outweigh thermal considerations. Flight would then take place along the point of maximum slope-current A or A' although thermals might cause an occasional break away (Fig. 6).

Escarpments such as cliff-edges or hill-faces will also provide good conditions when the wind has a component up the face and birds should tend to fly on the windward rather than the leeward faces of such places. Similar remarks can also apply in lesser degree to such things as woods, or even hedges, or stone walls, or ships.

Slope currents over the waves of the sea are also of immense help.

Towns provide an interesting type of terrain as they can hold

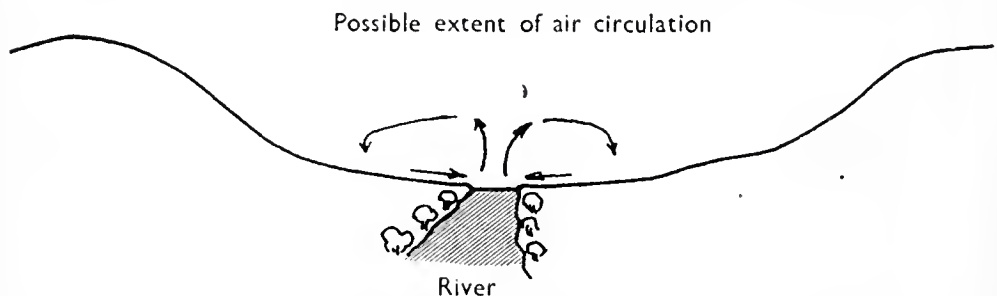


FIG. 7—VERY LOCAL CONDITIONS CAUSED BY HEAT IN RIVER WATER DURING SUDDEN SPELL OF COLD AIR-TEMPERATURE.

quite a lot of heat and their effects should be similar to those of the sea. They also however, produce a source of man-made thermals of small capacity. Gas-works and other plants using large quantities of heat will produce local up-currents which might provide aids to flight. They are probably of little use to long distance flight due to their narrowness but could provide a useful up-current for a plaything. Reports of Hirundines "smoke bathing" should be examined for possible confusion with their use of the up-current for enjoyment.

(3) CLIMATIC CONDITIONS

(a) *Temperature.* For thermals to be created the air must be warmed. The sun must therefore heat the air and for best conditions the air should be colder than the ground or sea. Such conditions might be at a maximum when a spell of warm weather is followed by a colder spell of brief duration, such as is encountered after the passage of a "cold front".

Thermals are created by differences in temperature and they may arise no matter how high or low the actual mean temperature is. The difference required may be as little as $\frac{1}{4}^{\circ}\text{C}$.

A temperature inversion may be favourable for the creation of standing waves but will normally create conditions unsuitable for soaring flight.

(b) *Humidity.* Water vapour is lighter than air and therefore

air containing a larger percentage of water vapour will ascend through drier air even though the temperature is the same.

(e) *Rain.* General rain is usually accompanied by overcast conditions and also by loss of heat due to evaporation. Thermals will not be created. Light rain showers from Cu. cloud will have little deterrent effect. Thunder showers from Cu/Nim. may indicate large thermals but may prevent their use by the heavy precipitation and latent heat characteristic mentioned above. In fact down-currents ensue from such conditions and cause an outflow of air from under the centre of the cloud.

(d) *Wind.* Thermals grow best under winds of five to thirty m.p.h. but higher speeds cause turbulence because of the effects of obstructions on the ground. Thermals tend to form in lanes downwind and one would expect the birds to follow these lanes either up or down wind.

Woodcock (1942) has observed that Herring Gulls (*Larus argentatus*) soar in straight lines when the wind-speed over the sea lies between $15\frac{1}{2}$ m.p.h. and 28 m.p.h. At lower wind-speeds the gulls soar in circles thereby indicating bubble or vertical column formation rather than the continuous roll formation deduced from the straight line soaring.

Wind shear, i.e. change in wind speed with altitude, is also favourable for standing waves; the principal observation made so far of the use of wind shear, however, is that of the flight of the albatross (*Diomedea* sp.) which is reputed to make use of the wind shear present over the first 50ft. or so of air above the ocean in order to maintain its flight.

(e) *Cloud.* This is an invaluable indication to the thermal state of the atmosphere.

(i) *Clear sky.* In Britain this usually means little or no thermal activity, but days with hot sun, light breezes and low humidity might have invisible thermals whose tops do not reach condensation level. Except for such days conditions are not good for thermal flight. Such days are rare in Britain but are common in Continental lands. Valuable indication of good or bad days can be given by watching the behaviour of smoke from isolated chimneys. If it continues to rise thermal conditions are present. If the base of the streamer continues horizontally or descends no thermals are likely to be about. (Fig. 4).

(ii) *Fog.* This is generally due to cooling of the air and thermals cannot exist.

(iii) *Overcast.* Similar to fog, but a lot depends on thickness of the cloud as thin cloud will allow infra-red rays through to warm up the air beneath. Generally speaking however, no thermal activity if cloud-base is low.

(iv) *Cumulus.* These are the tops of the thermals and on the average have a short life. The height of the base depends

on temperature and humidity and the higher it is the stronger the thermals are likely to be.

(v) *Cu/Nim.* The thunder cloud—usually an afternoon development of Cu. See remarks under *Rain*.

(vi) *High clouds.* If these are sufficiently thick they can prevent the sun's rays from reaching the ground, thereby preventing the growth of thermals.

(vii) *Frontal clouds.* The advent of a cold front may be seen as a long line of Cirrus or Strato-Cu. across the sky. As the front progresses the clouds become lower and lower ending in rain-clouds and rain until the centre of the depression is reached when it may be quite clear, although heavy Nim. or Cu/Nim. is usually encountered, followed by the fine weather Cu. as it clears up. The passage of the front is accompanied by a change in temperature and wind direction and this will give an indication of the arrival of better thermal conditions.

(viii) *Lenticular Cumulus.* This cloud is due to standing waves.

(f) *Pressure.* Variations of mean pressure in themselves have no effect on the incidence of thermals.

FLIGHT HABITS UNDER THERMAL CONDITIONS

Birds have often been observed to be making use of thermals. (Fig. 8.) The circling of hawks over a desert on a hot day is a classic example. The birds soar or flap lazily in circles, keeping themselves within the boundaries of the ascending current, but there appears to be no main tendency to circle clockwise or counter clockwise. Generally, however, all the birds using the same bubble circle in the same direction. Careful observation on the manner of flight and the wind and ground conditions can soon establish whether the bird is making use of a thermal. Flapping can become very lazy, or else the wings flex slightly to the rear to the optimum gliding condition. The bird is then in the attitude to maintain the least loss in height per forward distance traversed. It can maintain height only in two ways—(a) To a limited extent it can increase the angle of incidence of its wings to get more lift or (b) it must be in an uprising current. Careful watching can eliminate (a) as if the angle increases the speed will fall off until the bird stalls. This is the normal method of landing. Practice at following the landing procedure can soon lead to realization when lift is being obtained by this method. The only other item to eliminate is any upward slope or eddy current induced by the slope of the ground. Air blowing up a slope has sufficient upward component to sustain many birds without the need to flap. Kestrels (*Falco tinnunculus*), Buzzards and eagles make full use of such currents and sea-birds, too, enjoy the upward lift over a cliff-edge. Even the slope currents induced by the waves or a ship are used to great effect. These

slope currents must be looked for before one can say that the bird is soaring in or making use of a thermal.

There appears, however, to be a similar flight habit amongst Rooks and Jackdaws (*C. monedula*) during the winter months in

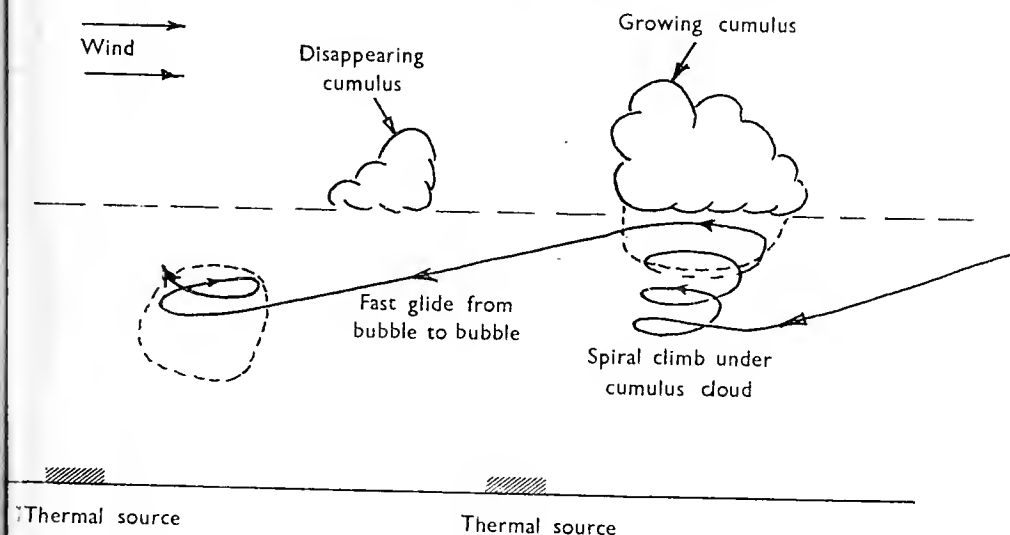


FIG. 8—USING THERMALS FOR CROSS COUNTRY FLIGHT. IT SHOULD BE REMEMBERED THAT MANY BUBBLES DO NOT REACH THE DEW POINT BEFORE THEY DISPERSE AND THAT CUMULUS CLOUD IS MERELY AN INDICATION OF STRONG THERMAL ACTIVITY.

particular, where these birds ascend in columns in flapping flight. This habit has been commented on by Waterhouse (1949), who does not think that the habit is associated with thermals but rather with position finding. I have observed similar columns in this country and also consider them to be independent of thermals. Rooks and Jackdaws are, however, some of the main users of thermals when going about their daily business and the passage of a thermal through a rookery is usually greeted with excitement ending in many birds taking off for a "joy ride."

There is the further flight habit noted by Woodcock (1942) where Herring Gulls at sea soar in straight lines instead of in circles. Woodcock has shown that this habit could be attributable to the creation of thermal rolls rather than bubbles when the wind speed is high enough. So far no similar observation has been made over land. Turbulence and eddy currents are however more likely to break up a continuous roll over land than at sea and it may be that no such similar activity has been observed because of the height at which it would take place or because similar rolls cannot arise over land.

HEIGHT OF FLIGHT IN THERMALS

From the foregoing one would expect bird flight to take place at the height at which the up-currents are largest in diameter consistent with providing sufficient lift to provide a saving of energy. It has been found by experiments in gliders that thermals tend to become strongest above 500ft. when they can be 4,000ft.

in diameter and have an upward velocity of 13ft./sec. Observations on soaring birds appear to confirm that they do fly at such heights, but Rudebeck (1950a) makes the observation that they fly higher when the wind is in their direction of migration than when the wind is against them. Although thermal soaring has been seen to take place at heights generally down to 100ft., few records appear to have been made of thermal flight below this height. At present little is known of the form of thermals lower down and it is possible that careful observation of soaring birds might give an indication of what is happening.

SPEED OF FLIGHT IN THERMALS

A soaring bird is normally using its wings to achieve high lift, thereby flying slowly, and flight in a thermal is therefore a leisurely affair. The amount of ground covered depends on the glide from thermal to thermal as well as the wind speed causing the drift of the thermal downwind. It should be realized, however, that the bird can use an up-current to increase speed rather than to increase height. If the upward component of the thermal is just sufficient to maintain a soaring bird at a constant height, then any increase in this component will mean that the bird will gain height unless it alters its wing angle of attack or wing area to reduce the lift of its wings. If it merely wants to keep its height constant it must do one of these things and either of them will result in an increase of air speed. If a bird wishes to maintain a constant altitude, therefore, the air speed of the bird will bear a direct relation to the upward velocity of the air current. This is probably unimportant in circle soaring as in that instance the bird would merely travel faster round the circle. The case of straight line soaring is, however, of much more interest as the bird can reach its optimum height and continue to glide at that height but with an increased airspeed. It must also be appreciated that the same conditions will apply to a bird in flapping flight. The bird varies its forward thrust and thereby its air speed by varying the amplitude of the beat or by increasing or decreasing the number of wing-beats per minute. In up-current conditions therefore, the flapping bird could reduce its wing-beat amplitude as well as reduce the flap-rate to its minimum. This would result in a considerable saving of energy which would result in an extension of the range of the flight.

On the other hand if the air speed is increased then the distance covered by a bird will be increased in proportion. Suitable thermal and drift conditions could then combine to be an immense aid to distance covering.

THERMALS AS GUIDING LINES

Mackintosh (1949), Goodwin (1949) and Rudebeck (1950b) have all observed thermal migration in progress, the first two in the Middle East and the last at Falsterbo in Sweden. All have observed that the Accipitres, who are undoubtedly among the greatest users

of thermals, will rather follow land in order to take advantage of the thermals than set a course over the sea where there are none. It follows that under such circumstances the guiding line of the coast may be due to more than the desire of the bird to maintain contact with a habitat which is known.

SUMMARY

Facts.

1. Ascending currents in the atmosphere exist due to the effects of wind blowing up a slope or rise in the ground (slope currents and wave currents) and the effects of the air being heated (thermal currents).
2. These up-currents are of sufficient strength to sustain birds in flapless flight.
3. Some birds make deliberate use of these air-currents.
4. Cumulus clouds give visible indication of the existence of thermals.

Suggestions.

1. Birds will tend to follow slope and thermal up-current lanes.
2. The use of slope and thermal currents tends to assist birds flying over sea by night and over land by day.
3. The advent of thermals is an indication to some birds that flying conditions are advantageous for distance flying.
4. The use of up-currents partly accounts for the heights at which some birds migrate.
5. The use of up-currents partly accounts for the tendency to drift with the wind during migration.

REFERENCES

This list is in the nature of a short bibliography of the subject as it includes references to some general works on bird-flight, apart from those mentioned in the text.

- BARRINGER, L. B. (1940): *Flight without power*. London.
- BROWN, R. H. J. (1951): "Flapping flight." *Ibis*, 93: 333-359.
- GRAHAM, R. R. (1932): *Safety devices in wings of birds*. London.
- GOODWIN, D. (1949): "Notes on the migration of birds of prey over Suez." *Ibis*, 91: 59-63.
- JACK, A. (1953): *Feathered Wings*. London. Chap. XII.
- MACKINTOSH, D. R. (1949): "The use of thermal currents by birds on migration." *Ibis*, 91: 55-59.
- PICK, W. H. (1938): *Short Course in Meteorology*. M.O. 247.
- RUDEBECK, G. (1950): "Studies on bird migration, based on field studies in southern Sweden." *Far Fagelvärld*, Supplementum 1. Lund, Sweden.
- (1950): "The migration of birds of prey in southern Sweden, particularly at Falsterbo." *Proc. Xth Int. Orn. Congr.*, pp. 317-319.
- SMITH, C. HORTON (1938): *The Flight of Birds*. London.
- STORER, J. H. (1948): *The Flight of Birds*. Michigan.
- WATERHOUSE, M. J. (1949): "Rook and Jackdaw migrations observed in Germany 1942-1945." *Ibis*, 91: 1-16.
- WILLIAMSON, K. (1952): "Migrational drift in Britain in autumn 1951." *Scot. Nat.* 64: 1-18.
- WOODCOCK, A. H. (1942): *Scientific Monthly*, 55: 226-232.

PARENTAL CARE IN THE WHITETHROAT

By R. W. CROWE

THIS paper is based on a study of the Whitethroat (*Sylvia communis*) during the spring and summer of the years 1951-1953. Some intermittent observations in 1950 are also included. The study area covers 26 acres, which consists of farmland, a garden, and allotments, and is bordered by a railway bank on the south side and by the village of South Nutfield, Surrey, on the west, with farmland to the east and north. The colony or group confined within the borders of a predetermined part of this area consisted of a population of 8-10 pairs whose territories averaged $\frac{3}{4}$ -acre over the three years.

No hidework was carried out. Any data which were in any way open to doubt owing to my presence too near the nest or any exaggerated movement on my part have been carefully omitted. In 1953 work was done at a considerable distance from a nest whilst I concealed myself as well as possible. A nest in an isolated position was specially chosen for this. No difference was found in the incubation and feeding rhythms.

Clutch size and variation, incubation and fledging period and breeding behaviour are beyond the scope of this paper and will be treated in detail elsewhere.

INCUBATION

The laying of the first egg was on every observed occasion 48 hours after the completion of the lining, and it was apparent that all eggs were laid before or soon after sunrise, at 24 hour intervals. These conclusions are similar to those reached by Brown and Davies (1949) in their study of the Reed Warbler (*Acrocephalus scirpaceus*).

Not enough information was obtained on the beginning of incubation to afford reliable generalizations. At two nests watched fairly intensely at this time, however, it appeared that the male began with spasmodic periods of incubation on the second egg. This would seem similar to observations made by R. J. Harris (*in litt.*) on the Blackcap (*Sylvia atricapilla*). One female Whitethroat did not begin incubating until her clutch of three was completed, but at other nests females began incubating before the last egg was laid.

The results of observations on the incubation period are given in Table I. Nocturnal incubation is not included as at all nests the female was observed to remain on the nest at night. It should be added that the sexes were told apart by the slightly different colour of the crown; this was supported by the singing of the males and differences in individual behaviour.

TABLE I—DETAILS OF INCUBATION IN THE WHITETHROAT (*Sylvia communis*).
(Based on observations at 9 nests).

A.—Duration of spells spent on the nest by each sex (Timings spread evenly over incubation period).

		Minutes under									Total
		10	20	30	40	50	60	70	80	90	
No. of timings	{ Male	...	10	21	18	8	3	1	2	1	65
	{ Female	...	4	16	18	11	7	4	2	—	62

B. Longest spell spent on the nest by each sex on each day of the incubation period.

		No. of days before hatching											
		11	10	9	8	7	6	5	4	3	2	1	
Time in minutes	{ Male	...	62	90	31	40	32	22	30	72	41	28	25
	{ Female	...	34	40	27	31	57	44	55	45	52	60	69

C. The share of the sexes in incubation and the amount of time the nest was vacant expressed as percentages for each day of the incubation period.

		No. of days before hatching											
		11	10	9	8	7	6	5	4	3	2	1	
% of time nest watched	{ Male	...	64	57	45	31	53	20	37	50	66	44	34
	{ Female	...	30	27	38	52	32	72	59	58	33	50	65
	{ Vacant	...	6	16	17	17	15	8	4	2	1	6	1

Note : Day 1 in each case is the actual day of hatching.

The figures in Table I show that the female spends a greater total of time on the nest than the male over the whole ineubation period, at the same time sitting for longer spells. The male spends much longer on the nest during the first few days of the period, and as incubation advances he slowly spends a smaller total of time on the nest and the length of his spells there get eorrespondingly shorter. The female on the other hand, spends short spells on the nest during the first few days and these get longer as the eggs get nearer to hatching. The time the nest is left vacant gradually diminishes as incubation progresses. The same behaviour has been observed in the Aerocephaline warblers by P. E. Brown and in the Blackcap by R. J. Harris. Spells by both sexes during the day tended to be longer in the morning and evening than during the afternoon. There was very little variation in first, second or repeat broods although it appears from the present study that the female takes a slightly greater share in ineubation in May than later.

The females were at all times much bolder at the nest than the males. Armstrong (1953) suggests this is because of the greater strength of their parental drive, but in the Whitethroat at the beginning of ineubation parental drive is stronger in the male. The males also took greater eare than the females in visiting the nest, the majority of them approaching in a very similar manner. At a distance they dropped into the undergrowth and slowly crept to the nest unseen, whilst the females generally flew straight there. The males, however, spoiled their precautions when leaving by coming straight up from the nest, but to the easual observer the sight of the female dropping to the undergrowth and of the male

coming up from the same place gave the impression of one bird flying down and up.

Nest-relief took several forms. Usually the relieving bird slowly approached making "char-ehar" notes, and the male varied this by using a soft warble. The female would also come off the nest if the male sang excitedly near-by or performed a song-flight overhead. However, calls were not always used in nest-relief and the mere approach of the relieving bird sometimes acted as a sufficient stimulus. The sitting bird did not always wait to be relieved and would fly round the territory using the "char-ehar" note, but always at a distance from the nest. The female nearly always went straight to the nest as soon as she heard her mate singing. Nest-relief was sometimes refused, especially when the nest had been empty for several minutes and the sitting bird had only been on it for a short period. The relieving bird was often seen to wipe its bill on a branch before entering the nest.

It was very noticeable during May (when territorial encounters were still common) that neighbouring male Whitethroats appeared to synchronize their periods on the nest. In the early morning males had not synchronized their times on the nest, and when two males started singing the third would cut short his spell of incubation and begin singing too. By afternoon and evening when the observer was watching one nest, there were periods of complete silence whilst the male was on the nest, and periods of song and encounters whilst the female was sitting.

TENDING OF THE YOUNG

The tending of the young can be divided into brooding, feeding, nest sanitation and the care of the young after leaving the nest.

(a) *Brooding*

Brooding spells were much shorter than incubation spells, about ten minutes being the average; anything over twenty minutes was very unusual. The female took the greater share (see Table II).

TABLE II—BROODING OF THE YOUNG IN THE WHITETHROAT (*Sylvia communis*)
(Based on observations at 8 nests).

The total number of minutes spent brooding the young by each sex during each of the first seven days of the fledging period (after the seventh day brooding appears to be negligible). The amount of time spent brooding is also expressed in brackets as a percentage of the total time of observation.

		No. of days after hatching—						
		1	2	3	4	5	6	7
Time in minutes	Total watch ...	695	1073	1211	1032	976	973	353
	Male brooding ...	168	349	181	75	75	62	26
	% of total time ...	(24)	(33)	(15)	(7)	(8)	(6)	(7)
	Female brooding	327	435	375	227	317	194	74
		(47)	(41)	(31)	(22)	(32)	(20)	(21)

Note: Day 1 is the actual day of hatching.

Usually the male and female collected food simultaneously, and returned together; the male would feed the young first followed by the female who would stay to brood until the male visited the

nest again with food, when they would both leave together. The male did most of his brooding in the early morning and late evening. Weather greatly affected brooding; during the first week of June 1953 when the weather was wet and cold a pair brooded their young to a much greater extent than normally. When the young were small the females brooded them all night, but none was observed to do so on or after the seventh night from the hatching of the last chick. Both male and female would chase away intruders near the nest during this period, although the young of first broods appeared to be tolerated in the territory as long as they kept their distance from the nest.

TABLE III—FEEDING OF THE YOUNG IN THE WHITETHROAT (*Sylvia communis*)
(Based on observations at 8 nests).

The average number of visits per hour made by each sex during the time of observation on each day of the fledging period. The total number of visits is included in brackets.

		No. of days after hatching											
		1	2	3	4	5	6	7	8	9	10	11	
Total complete hours													
watching	9	20	23	21	18	22	11	11	8	4	9
Male per hour	2.9	3.9	4.3	4.7	5.2	6.3	5.2	8.2	11.4	8.0	8.3
Total visits	(26)	(77)	(98)	(98)	(93)	(139)	(57)	(90)	(91)	(32)	(75)
Female per hour	3.3	3.0	4.1	4.1	4.2	6.0	4.7	10.4	12.4	8.3	10.2
Total visits	(30)	(60)	(94)	(86)	(75)	(131)	(52)	(114)	(99)	(33)	(92)
Note:		Day 1 is the actual day of hatching.											

Note: Day 1 is the actual day of hatching.

(b) Feeding

It can be seen from Table III that the feeding rate is shared equally when male and female give about the same amount of time to brooding (cf. Table II), but when the male's feeding rate increases his brooding rate decreases rapidly, whilst the female's feeding rate increases slowly as her brooding rate correspondingly decreases. Then until the young fly the female slightly exceeds the male in her care of the young. The greatest number of combined visits in one hour was 34, and the maximum individual visits in an hour was 20 for the female and 18 for the male. The feeding rate tended to be higher in the morning than later in the day, but the tempo increased when good feeding ground was encountered. Usually one bird searches in a different area from the other and visits the nest with food several times suddenly in quick succession, whilst the other bird only makes single visits. Most of the food is collected some distance away from the nest, but on occasions, presumably when the demand is great, it is gathered very close to it. Both birds trespass a great deal in other territories but are always chased out when observed by the owner.

During the first few days of feeding when the frequency of visits is low, it is surprising the number of times the male and the female return to the nest together to feed the young. At this stage, whilst they are collecting food both keep in constant touch with each other with the communication note. When feeding frequency

is higher they meet at the nest only occasionally, possibly more by chance.

The male still visits the nest in his indirect way, but appears bolder at the nest towards the last few days of feeding, whereas the female becomes more cautious during this period. The parent birds would not visit the nest when man or a predatory bird was near it; although the former was tolerated at a distance of about twenty yards, the latter would not be tolerated at all in the vicinity. A female who had food in her bill for the young saw a Little Owl (*Athene noctua*) and immediately attacked it; when the owl moved, the female left it and approached the nest again with the food still in her bill, but she turned back to attack the owl after she had covered half the distance to the nest.

The identification of food given to the young was practically impossible. During the first day the birds presumably fed the young with food (possibly small insects) held inside the beak. On the second day and after, the food most consistently brought to the young (at all nests with one exception) consisted of green caterpillars and this lasted from May to the end of July. These were carried singly at first, but, as the young grew, up to three or four at a time were brought. Small, off-white coloured larvae were fed fairly extensively after the fourth and fifth day. Small moths of a light greyish colour were given in large quantities at a nest watched in July. Once a male visiting the nest with one of these lost his grip on it and it flew away, which showed that they are, sometimes at least, brought to the nest alive. Brown-coloured caterpillars were fed at one nest on the fourth and fifth day. A male was observed to feed the young on a wireworm, and a cabbage white butterfly was brought to the nest, but from the fact that the male had a great deal of trouble handling it, it would seem that it was a food seldom used, as this particular one had to be eaten by the male after he had nearly lost it. At a nest watched in 1951 a geometrid caterpillar was given to the young, and a nest in 1953 contained several remains of ladybirds just after the young had flown.

(e) Nest sanitation

The removal of faecal sacs was shared by both parents and varied proportionally with the feeding rate. The following methods of disposal in order of precedence were observed although the changing from one method to the other was highly variable at different nests and not clear cut:

- (1) Disposed of by eating.
- (2) Taken away distances up to 30 yards and dropped.
- (3) Taken away in the bill and wiped off on a twig near-by.

The first method which was most prominent in the early stages could be observed till the young were fairly old, when it seemed

to merge into the third. When the first method is used both parents wipe their bills on a twig when leaving the nest. In the third method the birds go through the same actions, but leave the sac on the twigs, several of which are used. The second method which is used whilst the other two merge together was first seen at one nest 24 hours after the first egg hatched and at another not until the third day. Saes were taken away only occasionally up to the 6th and 7th day, but on the 8th day three were once taken away in half an hour and the maximum was seven in an hour on the 9th day.

(d) *Care of the young on leaving the nest*

In normal circumstances the young left the nest in nearly all cases just before or around mid-day, although when disturbed they would leave prematurely very easily on and after the 10th day from hatching at practically any hour. The young are cared for by both parents directly and for about two days after leaving the nest and then only by the female for about the next eight days. At one nest the young split up in two parties, and in this case the male took charge of two young and the female three, but it is usual for parents and young to keep together at first. In most cases young and adults move right away from the nest within about twelve hours of leaving it, although young that leave prematurely scatter in the undergrowth and spend longer in the vicinity. With the last brood, they and the parents would leave in a party within 24 to 48 hours. At a nest in July 1951, young and parents remained in a territory for three days before departing right away from the study area.

Young of first broods stayed in the territory provided there was enough cover in the form of a thicket. Parent birds tolerated the first brood provided the young kept well away from the nest area. Constant chases between the parents and the fledged young were observed during incubation and feeding of second broods.

SUMMARY

A colony of Whitethroats was watched during 1951-1953. Eggs were laid before or soon after sunrise at 24-hour intervals, and it appeared that the male started incubation. The female brooded at night at all nests. The male spent longer on the nest at the start of incubation than at the end, whilst the opposite was the case in the female. Males tended to synchronize their times on the nest during May when border encounters were common. The female took the greater share in brooding, which appeared negligible after the seventh day. The feeding of the young was shared fairly equally by both sexes, with the male playing slightly the greater part at the beginning and the female correspondingly more at the end. The food most consistently fed to the young was green caterpillars. Three methods of the removal of faecal saes

are described. Both male and female tended the young on leaving the nest, and in most cases parents and young moved right away from the nest area.

ACKNOWLEDGEMENTS

I am indebted to P. E. Brown, K. E. L. Simmons, I. J. Ferguson-Lees, A. G. Hurrell and R. J. Harris for reading through the draft of this paper, and for their helpful comments and criticism.

REFERENCES

ARMSTRONG, E. A. (1953): "The behaviour and breeding biology of the Hebridean Wren." *Brit. Birds*, xli: 37-49.

BROWN, P. E., and DAVIES, M. G. (1949): *Reed-Warblers*. East Molesey.

OBITUARY

BERNARD BERYL RIVIERE (1880-1953)

WITH the passing of B. B. Rivière on 27th December 1953, Norfolk lost not only its leading ornithologist, but a wise and gracious counsellor in all things concerning nature conservation in his beloved county. His contributions to Norfolk ornithology included annual reports which appeared in *British Birds* for the years 1923-1934 (inclusive) and his *History of the Birds of Norfolk* (1930). The latter work was not intended to supersede Stevenson's three-volume classic, *The Birds of Norfolk* (1886-1890), but to summarize the advances in knowledge of the county's birds gained during the intervening years and in this it succeeded, serving at the same time to stimulate further research. Mr. Rivière worked unremittingly on behalf of the Norfolk Naturalists' Trust, acting as its Hon. Treasurer until the time of his death and in many ways contributing to its expansion. He gained many new recruits for ornithology, especially amongst young people, to whom he gave every encouragement, and in whom he took a genuinely kind interest. He was a member of the Norfolk and Norwich Naturalists' Society for 45 years, acting as President in 1920-21.

B. B. Rivière was a son of the artist, Briton Rivière, R.A. and was educated at St. Andrew's University, later taking his M.R.C.S. and L.R.C.P. degrees (in 1906) at St. Bartholomew's Hospital, London and his F.R.C.S. Eng. two years later. He held appointments as Hon. Surgeon to St. Bartholomew's and Hon. Physician to the Birmingham General Hospital. Coming to Norfolk in 1908, he practised in Norwich until intermittent ill health compelled him to retire in 1926. From 1927 onward he served as a member of the Norwich Museums Committee, giving special help in natural history and art.

E.A.E.

OBSERVATIONS ON A PAIR OF NIGHTJARS AT THE NEST

By H. R. TUTT

INTRODUCTION

IN 1952 observations were made at the nest-site of a pair of Nightjars (*Caprimulgus europæus*) in Essex from the time the young were hatched till the birds migrated. The habitat was so different from the Brecks where E. Selous (*Zoologist*, 1899, pp. 388-402 and 486-505) studied the birds, and from Salthouse on the Norfolk coast where D. L. Lack (*Ibis*, 1932, pp. 266-284) did, that the behaviour of both adults and young was observed till fledging occurred and for some time afterwards.

There was only one pair of Nightjars in the woodland. The nest-area was sited beneath a stool of hornbeam on which the underwood was about 15 feet high, this having been left when the rest of the underwood in the area was felled. Opposite to the hornbeam was a stool of sweet chestnut with shoots 5 feet high in their second year of growth. The space between these was roughly circular, 6 feet in diameter, and surrounded by a dense growth of tall grass, bracken and other herbage. The young Nightjars occupied this site till they were 28/29 days old, when they were fully fledged; day roosting continued in the nest-site by one or both birds, and the place was last used by both juveniles together on 2nd August.

The nest with 2 eggs was located on 12th June and no other visit was made to it till 18th June at 17.00 hours.* The eggs were hatched, probably that day, as three half-shells lay just outside the nest-area and the fourth against a chick. The down was dry. The chicks made a low cheeping noise, and by the time we left had shuffled a foot away from the nest depression, so that already they could move about.

FEMALE LURE-FLIGHT

21st June: chicks 3/4 days old.

Keeper Steffan came with me to the hide, which we approached in full view of the female bird. She flew in slow, rolling flight, her wings hitting the tops of the herbage, tail partly fanned: she seemed to be pulling herself along by the wing-action on the grass and bracken. She settled in the dense growth about 30 yards away.

Ten minutes after the keeper left the female passed behind and over the hide with a low, staccato "chuk-chuk-chuk". She flew to my right, behind the nest, over the hide to my right again, rose higher repeating "chuk-chuk-uk" and dived into the nest area landing on my side of the chicks, where she lay like a log on her

* All times are British Summer Time

side as if supported by the shoulder of the opposite wing resting on the ground, her head turned to the hide, the left flank and breast exposed to my view. She lay frozen in that position for five minutes before righting herself, waddling to the chicks and shuffling down upon them.

On another occasion she rose, circled behind the hornbeam, then over the nest-site, rising and falling over the herbage as if semi-disabled; she glided to a bare branch of a young oak tree, sat along it, dropped the right wing, which hung as if broken. Then she dived in twisting flight to the herbage, flapped along the surface and disappeared.

MALE LURE-FLIGHT

At 21.30 hours on 2nd July I made towards the nest area through tall underwood. The male was churring and when I emerged into the nest-area about 60 yards from the nest-site, he flew round me in wide circles in dancing (i.e. rising and falling) flight uttering an excited "twick-twick" at intervals of about two seconds; the flight changed to circling at great speed. Nearer the nest-site he came just ahead of me and hovered about 12 feet high like a Kestrel (*Falco tinnunculus*), the white spots in the plumage shining distinctly; he went ahead of me in dancing, butterfly flight; the wings beat quickly, carrying the bird higher with very little forward motion, and were then stretched high over the back to their extreme length, when the bird parachuted lower, till the quick beats were resumed. Close to the nest it made with rapidly beating wings to the branch of a birch as if attempting to reach it and alight upon it; but it fell several feet when its head almost touched the branch; it tried again, and then again, giving a most realistic idea of failure through inability to fly normally; then the butterfly flight continued as he went round the hornbeam.

I was in the hide on several occasions in the evening before activity commenced till after it ended; on two occasions before activity commenced in the early morning till after it ended; and one whole night beginning before feeding started and finishing after the female was settled brooding for the day—a period of about seven hours. Activity started from 21.30 to 21.45 and ended at about 23.00 hours as a general rule; it began again about 03.15 and ended just after 04.00 hours. The maximum number of times the adults came into the nest-site to feed the chicks during any one period of activity was eight, and whilst the chicks remained in the nest-site they never made less than five visits for feeding: normally it was seven or eight. At the longest, feeding activity took place for no more than $2\frac{1}{2}$ hours out of the 24, yet the chicks thrived well, so that the food must have been of high nutritional value.

A SAMPLE MORNING ACTIVITY

26th June: chicks 8/9 days old.

I reached the hide at 03.05 (see "Female lure-flight" above).

The female flew off about five minutes after she returned following her lure-flight. A few minutes later the male flew in (white spots flashed as he alighted). There was a rhythmic sound: to me it resembled a very low, breathy "ehur, ehur, ehur," or it might be rendered by a breathy "yah, yah, yah"—this is no doubt the "eroodling" noise mentioned by Selous. After some time the male flew and churred near for about 15 seconds. The female arrived next and flew off after very few seconds. There is no "eroodling" when the visit is a quick one.

The female made five more visits, but the male did not come to feed again. Though I saw the female alight three times it was too dark for me to see exactly how the feeding was done. The last time the female fed the chicks the male flew into the nest-site, with wings stretched to their full extent vertically over his back: his toes seemed to touch the ground, but he arose and flew without folding the wings. The female flew off just afterwards but was back in about 10-15 seconds. She shuffled over the young and sat like a statue. Time 04.00. I left the hide at 04.30 without disturbing the female or seeing any sign of the male.

ALL NIGHT IN THE HIDE

1st-2nd July: chicks 13/14 days old.

A lad had flushed the female from the chicks just before I arrived at 21.30. Churring occurred for a few seconds as I was approaching the hide.

The young had begun to stretch their wings to the fullest extent on 24th June when 6/7 days old. I heard something leave the ground and alight again with a flutter only just audible, and saw first one and then the other chick fly up 3 to 4 feet like butterflies, and descend again sometimes to the spot from which they rose, at other times 2 to 4 feet away from it. Neither went outside the nest-area. The wing-beats were quick and the flight very rapid.

The male churred at 21.45 for ten minutes; soon afterwards he arrived and fed the chicks, who greeted him with loud ehurring echeeps as soon as they saw him; he left immediately but returned in a few minutes to feed again. The feeding was quick: the food seemed to be given from the mouth, the chick putting its beak to the male's gape. He flew and churred again for many minutes. He fed again just after the ehurring ceased, and returned very quickly to feed yet again. He then churred for a considerable period.

A bird showing no white spots arrived, fed and flew; the same bird came back quickly and as the male was ehurring in the distance this was confirmed as the female. The chicks echeeped loudly every time they saw an adult and if the visit was delayed but the adult was still in sight, the echeeping grew in intensity, the sound carrying to a considerable distance.

The male fed next; he left and churred for 2 or 3 minutes. Deep silence fell, except for very, very faint echeeps every 2 or 3 minutes

from the chicks. Time 22.47. I looked at the watch again at 23.48 and about 2 or 3 minutes afterwards a bird arrived showing no white spots—the female. There was the cheeping greeting; then the rhythmic sound (the “croodling”) for what seemed 3 or 4 minutes. This sound seems to occur whilst food is given, but the darkness blacked out everything.

Complete silence followed and continued till 02.40 hours when the male began churring and continued with one or two short intervals of about 3 minutes till 04.00. The female left without my hearing or seeing her go (the normal flight is almost silent), but I knew she was gone by the vertical flights of the chicks as seen last evening.

The female flew in with “quirk, quirk, quirk”—very low notes—at 03.00, fed one chick and left. After a time the male flew in and fed in one of his brief pauses in churring. The female fed every other time—seven in all. The chicks were active in vertical flights during all the intervals. The female was away a long time before her final return and then fed first one and then the other chick, the rhythmical “yah, yah, yah”—breathy sound all the time. Feeding ended at 04.10 and the female settled to brood. The male churred for a few seconds at 04.12, then silence. I crept out without disturbing the female at 04.22 and stayed in the vicinity till 04.30.

The behaviour this night suggested the possibility of a second nest: the absence of the female from near 23.00 to midnight (unknown earlier), the long outbreak of churring after only brief outbursts for some days, seemed factors pointing to further breeding, but as events proved there was no second nest.

Under the hornbeam the light was never good enough for me to see exactly how the feeding was carried out. On two occasions I saw the chick put its beak into the gape of the adult. The rhythmical sound never occurs unless the adult has been away for some time, seeming to imply that a considerable amount of food has been collected: it is then that the feeding seems to last for a long time, and only then that the “croodling” occurs. When the return of the adult is very quick the stay for feeding is a matter of seconds: as early as 5/6 days the chick runs with waving wings to the adult, which takes off again immediately, suggesting the food is given straight from the gape. Can it be that the Nightjar feeds direct from the bill on quick visits, and by regurgitation after longer absence? Or is the great gape, frequently shown when adults and young yawn during the day, capable of holding a large amount of food, the croodling note being uttered by the adult as the young take this food from the gape.

Selous stated that when the chicks begged by putting their bills to the female's gape, she sometimes fed one. I saw begging, but no food was ever given till the female returned from flight.

The first time a chick flew out of the nest-area was on 2nd July

Eric Hosking

BERNARD BERYL RIVIERE
(1880-1953)

An appreciation of B. B. Rivière appears on page 260. He is shown here on the left, in company with the late H. F. Witherby (centre) and the late Jim Vincent.





R. Vaughan

BREEDING HABITATS OF ALPINE ACCENTOR (*Prinella collaris*)

This species breeds almost entirely on rocky mountain slopes between the tree limit and the snow line. The upper photograph shows the Sierra Nevada in Spain, and the lower the Monte Maiella in the central Apennines of Italy. In the latter most pairs were breeding in the craggy outcrops of harder rock which interrupt the vast screens of limestone fragments. (see page 267)



R. Vaughan

HABITATS OF ALPINE ACCENTOR (*Prunella collaris*)

Upper: This shows a grass-grown ledge outside a shepherd's "grotto" in the Monte Mariella, central Apennines; here Alpine Accentors caught much of the insect food for their young, the nests being in neighbouring crevices and crags.
Lower: The hide from which the Alpine Accentors (plates 37-39) were photographed in the Sierra Nevada. The nest is on the rocks to the right.



R. Vaughan

NEST-SITES OF ALPINE ACCENTOR (*Prunella collaris*)

Left: A young shepherd pointing to a nest in the Sierra Nevada; this is a characteristic situation. *Right:* An actual nest hidden away in a crack in a rock-face on the Monte Mañella, central Apennines. The nest is often rather loosely and untidily constructed of dry grasses and roots, but the cup is neatly lined with moss, hair, and sometimes a few feathers.



R. Vaughan

ALPINE ACCENTOR (*Prunella collaris*) AT THE NEST: SIERRA NEVADA, SPAIN, JUNE 1954
 It is obvious from this how much the Alpine Accentor resembles the Duncock (*P. modularis*), though it is larger, stouter, and has a less crouching stance. This plate gives an indication of the black spots on the whitish throat. (see page 267)



ALPINE ACCENTOR (*Prunella collaris*) AT THE NEST: SIERRA NEVADA, SPAIN, JUNE 1954
Apart from its larger size and black-spotted throat, this species is characterized by the pale tips to the wing
coverts which form two bars, and by the brightly streaked flanks where the feathers are chestnut with light
tips. The wing bar is particularly prominent through abrasion.

R. Vaughan



R. Vaughan

ALPINE ACCENTOR (*Prunella collaris*) AT THE NEST: SIERRA NEVADA, SPAIN, JUNE 1954
 In flight the Alpine Accentor is paler above than the Duncock (*P. modularis*), and the pale tips to the dark brown tail feathers—just visible here—are very noticeable. Like the Duncock, this species feeds on insects during the summer and seeds in the winter. The nest is just visible on the right.



M. D. Englund

UNUSUAL NEST OF BLACK-THROATED DIVER (*Gavia arctica*)

CENTRAL SWEDEN 1951

These photographs show a rare type of nest, being a vast mass of vegetation built on small rocks in the centre of a large lake. "Built-up" nests of this kind have occasionally been recorded previously in Scandinavia. (see page 276)

at 17.30. G. J. Lawrence was arranging his camera for a photograph of the chicks squatting, when a sudden incautious movement made one chick take wing, fly about ten yards and alight in the herbage. This was the first time a chick had left the nest site—14/15 days. I entered the hide at 21.40. There was a high, cool north wind and a clear sky. Five minutes later, the chick that had flown out earlier, flew across the nest site, landing beyond it; this chick gave a high pitched squeaky "ehurr". The chick on the site began vertical flights up to 6 feet; the other chick flew in and both joined in the exercise, rising and descending, like huge butterflies, without pause, for several minutes, and then squatted together awaiting the adults. During the intervals between feeding, the flying exercise continued, the up-and-down flights being varied by swift circling of the nest site.

5th July: 17/18 days. For the first time the chicks were alone in the nest-site.

From 6th to 12th July one, or both chicks were present each day, both being there on the 12th at age 24/25 days.

13th July: 25/26 days. In hide at 03.05. One juvenile cheeped faintly from the site. At about 03.25 a bird flew into the site; no excited cries greeted it—this was the other juvenile. Flight activity followed; I think both birds took part but could not certainly determine this. The bird(s) went over and behind the hide, back into the nest-area and out again, one eventually settling just behind the hide where the herbage was trodden flat. Just before 04.00 I heard the low, sharp "quick, quick" note of the male: he was greeted by loud churring cheeps; a juvenile flew to him as he alighted: he was gone in 2-3 seconds. He came again in about 4 minutes and churred after leaving for a few seconds. Next time he arrived the juvenile behind the hide greeted him and was fed—the first time one had been fed outside the nest-site during observation time. Activity ceased at 04.15; one juvenile was on the site: it cheeped faintly for a time, then waddled to the place it occupied the previous day, rolled (see later) and preened, before becoming still. I left at 04.40.

14th, 15th and 16th July. Both juveniles were in the nest site all day. On the 16th (28/29 days) I entered the hide at 21.05, both then squatting close together. One made the "rolling" movement and was then still again. At 21.25 heads were raised and lowered, wings stretched to the full extent. One flew up and alighted again; both made short flights and at 21.30 they sat a little apart in the middle of the site; at 21.35 they uttered low cheeps; at 21.40 both flew out of the nest area but were in the near vicinity as both were cheeping for the next 5 minutes. At 21.50 the male churred and from that time till I left at 22.20 no bird came, nor did I hear any sound to indicate one was in the vicinity—both had evidently gone with the adults to feed.

2nd August: 45/46 days. The keeper saw both juveniles on the

nest-site; the female was 5 feet above them perched along a branch of the hornbeam and the male was flushed from a spot 50 to 60 yards away.

3rd September. The keeper saw one Nightjar on the branch of a tree near the nest site and another on the ground not far away at 18.30. This was the last time Nightjars were seen.

ROLLING

Both the female and the young indulged in a rhythmic movement, which I have termed "rolling". The body "rolls" from side to side, first one way and then the other. On occasions I could see the feet move beneath the bird, showing that it was due to alternate pressure on each foot. The opinion I formed was that this was purely a relief-activity after long sitting; it did not introduce preening or other movements; often it was performed for a few seconds and then the bird was quite still again.

PREDATORS

One afternoon two Jays (*Garrulus glandarius*) flew into the hornbeam arriving with a harsh cry. The young had been moving about prior to their arrival, but instantly all froze into perfect immobility, the female closing her eyes, and remained like that till after the Jays departed, ten minutes later.

FEEDING

One could not see that food was actually given at each visit, but when the chicks were old enough their excited greeting showed clearly they expected to be fed. Some visits were so brief that the adult was gone again in a very few seconds, and others much more protracted, when the rhythmic note already mentioned occurred. This was not an interval note—it proceeded steadily without break, to what I considered was the end of feeding. Could the bird "croodle" (Selous) whilst regurgitating, or was there one big regurgitation to the gape and then "croodling" as the young received the food—in what manner I cannot say? Certainly the very quick visits seemed to deny regurgitation on those occasions.

On 2nd July Keeper Steffan took up a position where he could look into the nest about 11.00; he could see the female and the two juveniles. At 11.33 he saw the male fly into the nest-area carrying what he thought was either a butterfly or a moth in the beak, and alight. The chicks ran to him; the female flew up round the hide and settled in the other side of the nest area. She sat dust-bathing and preening. He could not see how the young obtained the food from the male. They were still in that position when he left an hour later.

PHOTOGRAPHIC STUDIES OF SOME LESS FAMILIAR BIRDS

LXIV. ALPINE ACCENTOR

Photographed by R. VAUGHAN

(Plates 34-39)

THOUGH it winters on lower ground, the Alpine Accentor (*Prunella collaris*) is confined in the breeding-season (May-August) to mountains from the tree limit to the snow line, and is perhaps most common at heights of over 7,000 feet. Plate 34 shows two typical areas where Alpine Accentors are found, the Sierra Nevada in Spain and the Apennines of central Italy: the habitat is essentially one of broken and barren rocks. The range of the species extends in mountainous areas from N.W. Africa and Spain through south and east central Europe across Asia to Japan.

The nest is normally in a crevice in a rock face or in a space among broken boulders. Plates 35 (lower) and 36 (left) show sites that are typical of the immediate surroundings of the nest, while the nest itself can be seen in plates 36 (right) and 37. It is often loosely and rather untidily constructed of dry grasses, and is almost as big as a Blackbird's (*Turdus merula*) in size, but the cup is neatly formed with moss and fine grasses, lined with hair and sometimes feathers. The three or four eggs are blue, slightly paler than those of the closely related Dunnock (*P. modularis*) and noticeably larger, being almost the size of a Skylark's (*Alauda arvensis*).

The bird itself is larger and more heavily built than the Dunnock, which it much resembles in many ways. The characteristic features are its whitish bib spotted with black (plate 37), its double pale wing-bar and bright chestnut flanks (plate 38), and the pale tips to its dark tail-feathers (plate 39). The last character is noticeable in flight, when the paler and brighter colour of the back is also striking. Like the Dunnock, the Alpine Accentor quickly takes cover when flushed, but is unobtrusive rather than timid and at times permits a close approach, particularly at the nest or while it is feeding. Often it is located by its pleasant, warbling song. Its carriage is slightly less crouching than the Dunnock's and its movements on the ground are more hurried.

Mr. Vaughan writes that in the Sierra Nevada, where he was photographing the birds at a height of over 10,000 feet, the nests were high on the sides of the valleys and some distance from the feeding-grounds, which were mostly in the areas of melting snow in the valleys themselves. Like the Dunnock, the Alpine Accentor feeds on insects in the summer and on seeds in winter. The young are fed by both sexes almost entirely on soft insects (plates 38 and 39). In the Apennines in June 1952, Mr. Vaughan found that the birds obtained much of the food for their young in the grottoes where sheep spend the night (plate 35, upper). I.J.F.-L.

SPECIAL REVIEW

By D. D. HARBER

THE BIRDS OF THE SOVIET UNION. Under the general editorship of G. P. DEMENTIEV and N. A. GLADKOV. (*State Publishers "Soviet Science"*, Moscow, 1951-54). 6 vols. (In Russian).

CONTENTS OF VOLUME 2 (1951; 480 pages)*

THIS volume starts with the Columbiformes which are the work of R. N. Meklenburtsev. The typical race of the Rock Dove (*Columba l. livia*) has only a relatively limited distribution in the Soviet Union in a truly wild condition. It is to be found in the Crimea and around the Sea of Azov and there are a few in the areas of the lower Dnieper and the Don though in these last two cases the authorities quoted are dated 1911 and 1910 respectively. It is stated to breed in the northern Caucasus, but the date given here is 1886! It possibly breeds on the Volga, Oka and Sura and certainly does so on the Sviaga. Some breed between the Volga and the Ural. It is rare in the area of the upper Tobol and is to be found in the region of the upper Irgiz (1908). There are a few on the north shore of the Aral Sea (1911). In Tarbagatai there are considerable colonies, but here, as in the whole area east of the Urals, there is considerable mixture with *C. l. neglecta*. But the typical form nests in Altai (1938) and in the area of the upper Yenesei (1914). North of these areas the bird has only spread in a semi-domesticated condition, e.g. to lat. 66° N. on the Peehora which is given as the northern limit of feral birds in *The Handbook*. The bird is nowhere numerous. In Europe there are often only isolated pairs breeding, though occasionally small colonies of several pairs occur. In the eastern half of their Asiatic range colonies of up to several dozen pairs are found. About 60 years ago they were much more numerous, flocks of up to 50,000 birds being recorded. The author, who has already put forward a general defence of the pigeon family against accusations of being harmful to agriculture, takes pains to defend this bird which, he says, normally only takes grain that has fallen to the ground. Sometimes, it is true, after snow has fallen, it will perch on the stooks which remain in the fields and peck the grain from the ears. But the damage so caused is very slight because in the first place the birds are very few in number; secondly with heavy falls of snow they leave the district and thirdly grain thus left in the fields in winter will be lost anyway. *C. l. neglecta* is a paler form found in Transcaucasia and central Asia. It nests not only on rocks but on buildings. The author states that only 20 or 30 years ago it was to be found in thousands and tens of thousands in every

* A discussion of the contents of Volume 1 appeared in the last issue of *British Birds* on pages 221-224. Reviews of the remaining volumes will appear in successive numbers.

central Asian town, but that now it has disappeared completely from towns and villages there and is only to be found in uninhabited localities. The reasons for this, we are told, "remain not quite clear", but one may surmise that they are not unconnected with shortages in human food supplies over the same period.

The Stock Dove (*C. ænas*) is exclusively an inhabitant of woods and forests in the Soviet Union and the improvement of these through the removal of the decayed timber in which it nests is said to have had a catastrophic effect upon its numbers. It is now relatively rare everywhere. Even in winter-quarters in Transcaucasia it is only seen in flocks of 30 to 40 though perhaps flocks of a few hundred may still be noted in the western Ukraine during autumn migration. In Turkestan another race, *yarkandensis*, has been separated. It is not numerous, but it has not declined like other pigeons in this area, no doubt because it does not nest near Man. The Woodpigeon (*C. palumbus*) has also declined in the Soviet Union owing to felling of timber "and perhaps to shooting". Flocks numbering hundreds are no longer seen and even on migration only a few dozen are seen together.

Some information is given about the food of the Eastern Rufous Turtle Dove (*Streptopelia o. orientalis*). In the stomachs of birds shot in the Far East have been found rhizomes of grasses, barley grains, sand and a few snails. In Sakhalin it is said to eat vegetables, particularly cucumbers and cabbages. In the crops of birds obtained near rivers have been found many *Phryganeidae*. This bird has, exceptionally, nested on the ground.

The Pterocletiformes (made a separate order by the Russians) are by G. P. Dementiev. The regular nesting of Pallas's Sand Grouse (*Syrhaptes paradoxus*) in the area of the lower Volga and in the Volga-Ural steppes is considered doubtful. The area of certain breeding begins only in the Aralo-Caspian region and extends to western Manchuria. The irregular movements carried out by this species are ascribed to food difficulties due to heavy snow or to the formation of a crust on the snow. They are not due to over-population. Such movements take place not only in a westerly but also in an easterly direction though the latter have been less studied. There is no synchronization between westerly and easterly movements which shows that only the populations of certain areas are affected owing to local conditions. Some account is given of the display of this species: "The male at this time (mid-April) displays and calls, running round the female in a pigeon-like manner, but without puffing out his neck and without bowing. Sometimes he flies in circles round the female. The displaying bird drives away other males."

The Turniciformes are likewise by G. P. Dementiev, but as there is only one, Far Eastern, bird of this order in the U.S.S.R. it need not detain us.

The Gruiformes are made a separate order and are by A. M.

Sudilovskaya. Eight species of crane are given for the Soviet Union, one of which, *Grus australasiana*, should hardly have been admitted as it is based on a single bird of this almost sedentary species shot near Yakutsk in the 1890's. The Common Crane (*Grus grus*) breeds as far south in European Russia as the lower Volga (lat. 47°N.) It is "as common as is possible for a large, wary bird which is subject to continual persecution in many places". Those which winter in Transcaucasia do not fly north in spring but south, into the mountains. Casual mention is made of two seen on the Iranian frontier in winter "which flew to roost every night on the same tree standing among boggy rice fields." *The Handbook* gives perching on trees as exceptional. Figures are given for the weights of nestlings at various ages. (Such figures are given for a number of species.) The eastern race, *lilfordi*, is regarded as doubtfully distinct.

The Otidiformes are likewise made a separate order which is dealt with by E. P. Spangenberg. The distribution of the Eastern Little Bustard (*Otis tetrax orientalis*) in the Soviet Union is now sporadic owing to the ploughing of virgin steppe "and to other reasons" and in many places it does not nest so far north as formerly. It seems to be getting rarer each year. It is still regular, however, in the most southerly parts of the Ukraine and the steppe regions of the Crimea and also in the area north of the Caucasus, including the middle and lower Don and the Stalingrad district. In places in the steppes of northern Kazakhstan and western Siberia it is even abundant. Since birds from a wide area winter in Transcaucasia the numbers recorded there at that season are still considerable, flocks of 500-600 being not rare and even up to 20,000 together having been recorded (when is not quite clear). The nest of this bird is "lined with a thin layer of dried stalks and other old vegetable matter." The nest-scape is sufficiently deep (about 9 centimetres) for the back of the sitting bird to be level with the ground, the white parts of the plumage being thus hidden. There are two records of layings of 9 eggs and one (from the Syr-Daria) of 11. "The last laying probably belonged to a single female as all the eggs in this nest had an abnormal blue-green coloration with hardly perceptible spots". Though a silent bird it has a low call, "pool-pool-pool". The Houbara Bustard (*Chlamydotis undulata macqueenii*) nests in Europe only in Armenia and not in the lower Volga as stated in *The Handbook*. In Asiatic Russia its northern range is from the lower reaches of the Ural river to south-east Altai. Its migrations are obscure as it is a very shy bird and not often seen, though not uncommon. The nest-scape is surrounded by a little wall of old vegetable matter, possibly formed by the action of the wind while the bird is sitting. Only the female incubates and she alone rears the young, the male not being seen at the nest once laying is completed. This species apparently does not drink and no one has

heard it call except for a thin squeaking from chicks. It prefers to run rather than fly and can do so at about 35-40 kilometres an hour (timed in a car).

The Great Bustard (*Otis tarda*) is still common and is in places abundant in the southern steppe regions of European Russia. Ploughing of virgin lands has affected it considerably less than the Little Bustard as it will nest on cultivated land. Nevertheless "excessive persecution is gradually pushing it out of a number of inhabited areas". But in places it has actually extended its range northwards with the cutting down of forests. Huge numbers can still be seen in winter in Transcaucasia and south-west Turkmenia. In general this bird feeds mainly on vegetable matter in spring and autumn and on animal matter in summer. It cannot do without water and will drink even brackish water when only this is available.

The Alciformes, considered to be an order by the Russians, are dealt with by G. P. Dementiev. Eighteen of the twenty world species of this order are to be found in the U.S.S.R., sixteen of them as breeders, mostly in the Far East. For purposes of protection sanctuaries have been established for these birds on islands off the Murman coast and on the west side of Novaya Zemlya. The Northern Razorbill (*Alca t. torda*) is numerous on the Murman coast but rare in the White Sea. It also nests on the north-west shores of Lake Ladoga. Its incubation period is given as 35-36 days and the young are stated to leave the nest when 19-20 days old. The Little Auk (*Alle alle*) nests on Severnaya Zemlya, but it is not known to which sub-species these birds should be attributed, if indeed *polaris* is a valid sub-species. In Novaya Zemlya this bird feeds almost exclusively on *Calanus finmarchicus*. The race of the Guillemot breeding in the Soviet Union is stated to be *Uria aalge hyperborea*, not *U. a. aalge* as given in *The Handbook*. It nests only on the Murman coast where it outnumbers Brünnich's Guillemot (*U. lomvia*) and on Novaya Zemlya where it is very much inferior to the latter in numbers. On the Murman coast there appear to be 110 males to every 101 females. Incubation lasts 35 days and the young descend to the sea when 25 days old.

The typical race of Brünnich's Guillemot (*U. l. lomvia*) breeds in huge numbers on Novaya Zemlya, there being estimated to be 4,000,000 birds on its west coast. Eggs are first laid at the end of May and sometimes as early as 20th May. The birds along the north Siberian coast have been separated as *U. l. eleonora* and those on Wrangel Island as *U. l. heckeri*, but the author is doubtful of the validity of these sub-species. *U. l. arra* is given for the Pacific coast south of Bering Strait. There are records of the typical race from the interior of European Russia.

The validity of the various races of the Black Guillemot (*U. grylle*) which have been put forward is doubted but these are nevertheless given. The birds nesting in the Murman-White Sea area

are given as *atlantis* while those from the Baltic, including Lake Ladoga, are attributed to the typical race. In the case of the former race it is said that in the nesting holes "there is a peculiar lining of small stones which protects the eggs from moisture." The typical race of the Puffin (*Fratercula arctica*) has its largest colony in Soviet territory on the Ainov Islands off the Murman coast where about 20,000 pairs breed. It is scarce on Novaya Zemlya, the only colonies mentioned amounting to about 70 pairs. The young are stated to leave the nest and take to the water at between 36 and 40 days of age.

The Gaviiformes (or Colymbiformes, as termed in *The Handbook*) are by G. P. Dementiev who is careful to point out that the amount of harm done by these birds to the fishing industry is really relatively slight. The southern breeding limit of the Red-throated Diver (*Gavia stellata*) has not yet been ascertained but it appears to be further to the north than that given for European Russia in *The Handbook*. The race *squamata* (Franz Josef Land and Spitsbergen) is considered doubtful. The White-billed Diver (*G. adamsii*) is treated as a race of the Great Northern Diver (*G. immer*). No discussion is given to the possibility of its being considered a separate species. The breeding of the former in the Soviet Union is sporadic and extends from the Murman coast along that of north Siberia. It nests on Kolguev but not on Kanin. It is rare everywhere except in north-east Siberia. The Great Northern Diver is very rare in the Soviet Union and statements that it has occurred at Odessa and off the Crimea "are undoubtedly erroneous".

The Black-throated Diver (*G. arctica*) winters in small numbers on lakes in the interior of European Russia, being, apparently, the only diver which does so. Ringing has established that birds of the typical form from even its most easterly limit (the Olenek) winter in the Baltic, thus making a journey of more than 6,000 kilometres. The birds from the tundra first move north and then west along the coast on autumn migration. Birds of the race *viridigularis* (E. Siberia) move south east and probably east. Birds breeding in the southern part of their range in European Russia migrate in winter partly to the Baltic and partly to the Black Sea, sometimes reaching the Mediterranean. The breeding season starts in the first third or in the middle of April in the south but not until about mid-June in the north. The race *suschkini* (W. Siberia) is rejected.

The Colymbiformes (or, as termed in *The Handbook*, the Podicipitiformes) are also by G. P. Dementiev. The typical race of the Red-necked Grebe (*Podiceps griseigena*) breeds sporadically and unevenly over its range in the Soviet Union, but it is numerous in the areas of the lower Dniester and the lower Volga and in the N.W. Kazakhstan. There is a colony of the American race (*P. g. holboellii*), the most westerly in the Soviet Union, at Lake Balkash

and the neighbouring lakes. It is doubtful if the Slavonian Grebe (*P. auritus*) breeds in the White Sea—Archangel area. There is no mention of breeding on Sakhalin (given in *The Handbook*). On the whole it is a rare bird, but it is common in places, e.g. in the mountain lakes of the Altai, in the basins of the Ob and the lower Irtysh. The Black-necked Grebe (*P. nigricollis*) “apparently” breeds in Ussuria, Manchuria and Northern China.

The Procellariiformes are by A. A. Sudilovskaya. The light colour phase of the Fulmar (*Fulmarus glacialis*) predominates at the colonies on Novaya Zemlya (north island). The Pacific race (*F. g. rodgersii*) possibly nests on Kamchatka and certainly does so on Sakhalin where it is common. The Sooty Shearwater (*Puffinus griseus*) has, since 1939, been met with in large numbers in the seas of the Far East by Sleptsov. Localities given are the Sea of Okhotsk and the shores of Sakhalin. The Storm Petrel (*Hydrobates pelagicus*) is very rare in the Soviet Union, two records only being mentioned, one from the Sea of Azov and the other from the Black Sea, and of these one is considered doubtful.

The Phoenicopteriformes (considered an order by the Russians) are the work of E. P. Spangenberg. The Flamingo (*Phoenicopterus ruber roseus*) now breeds in the U.S.S.R. mainly on the eastern shores of the Caspian Sea in Komsomolets (formerly Miertvyi Kultuk) and Kaidak Bays. Up to at least 1937 there was a colony in the south of the Kara-Bogaz, but apparently this has now ceased to exist. The only other colonies are at Lake Chelkar-Teniz in the Turgai Steppe and at Lake Dengiz, 150 kilometres south-west of Akmolinsk. The only colony in Transcaucasia is outside the boundaries of the U.S.S.R. The birds winter around the southern half of the Caspian. It is estimated that the total population amounts to not more than 50,000 birds, far fewer than in the past. In the Caspian area breeding has been recorded as beginning during the first third of May. The main food in the Kara-Bogaz used to be *Artemia salina*, but this completely disappeared owing to the increased salinity of the water. It has been observed that in the case of very saline water the birds immerse only the bill, probably because of the effect of the salt upon the membranes of the eye since in less salt waters not only the head but part of the neck is immersed.

The Ciconiiformes are likewise by E. P. Spangenberg. Some birds of this order, it is stated, do a certain amount of harm to the fishing industry, but this is by far outweighed by their destruction of insects injurious to agriculture. The race *major* of the Spoon-bill (*Platalea leucorodia*) is rejected and the typical subspecies is therefore given as extending throughout Asia. It nests in small numbers in the lower reaches of the Dniester and Dnieper. Its breeding in the Asiatic part of the U.S.S.R. is sporadic. It is most numerous on the lower and middle Syr-Daria and on the east shore of the Aral Sea. In the Astrakhan Sanctuary 710 were

counted at the end of the 1939 breeding-season. (There may be a mistake in the year here as the authority for this is given as "Romasheva, 1938".) Incubation is said to last 24-25 days.

The Glossy Ibis (*Plegadis falcinellus*) is numerous in the lower and middle Syr-Daria, south-east Balkash and in the Volga delta. In the Astrakhan Sanctuary 12,620 birds were counted in 1935 (judging from similar statements in relation to other species this count was probably made at the end of the breeding season and thus includes young). Both here and in the Syr-Daria region the first eggs are laid at the end of April and general laying begins during the first third of May. Details are given of the share taken by the sexes in incubation. The Far Eastern species *Nipponia nippon* which nests mainly outside the U.S.S.R. is described as a vanishing bird badly needing protection.

The Black Stork (*Ciconia nigra*) breeds on Sakhalin. Nesting in the Crimea is described only as "probable". It is absent from an area from the south Ukraine eastwards and between the eastern shores of the Caspian and Tarbagatai. It is generally scarce or rare and is most abundant in east Transcaucasia between the mouth of the Kur and the Iranian frontier. In this area, though not elsewhere, it nests near human habitations, sometimes even in villages, and feeds upon cultivated lands. Cliff-nesting is recorded from Turkmenia, Tadzhikistan and Kirghisia. In the Lenkoran district and sometimes in that of Chernigov pairs nest close together with occasionally two occupied nests on the same tree. In the former district it sometimes breeds on the outskirts of heron and cormorant colonies. Sometimes the nest is concealed by foliage but at others it is exposed and can be seen from far off. The number of eggs is 2 to 5, rarely 6. Always less eggs hatch than are laid, 2 out of 5 often failing to do so. The young of Passerines are given as among its less important foods.

The typical race of the White Stork (*C. ciconia*) is stated to be gradually extending its breeding-range to the north and east. On occasions it has been recorded in winter in European Russia. It is not a rare bird and is particularly common in the south-west and west of European Russia and in parts of Transcaucasia. On a number of occasions the parent birds have been seen to throw one of the young out of the nest. This is perhaps due to difficulties in procuring food. The Far Eastern race (*boyceana*) is now becoming extinct and needs full protection. The E. Asian race (*jouyi*) of the Heron (*Ardea cinerea*) is not given for any of the territories of the U.S.S.R., the typical race, it is claimed, extending to Mongolia and Japan, but it is stated that the boundary between the two forms is not yet definitely decided. In Yakutia, away from the main breeding area, nesting began in 1916 and the bird is now common there. Herons nesting in extreme south-east Europe and in western Asia mainly winter in the area of the south Caspian, while eastern birds winter from central Japan to India. A few

winter in the south Crimea and those in Transeaucasia are sedentary. Numbers are most considerable in the Black Sea and Caspian areas. In the Astrakhan Sanctuary about 23,500 birds were counted in 1935. The size of colonies varies considerably in different districts: in some only isolated pairs are found; in others there are up to 300 nests together. In the northern part of their range Herons often share their nesting-sites with pairs of hawks or owls and sometimes with Hooded Crows (*Corvus cornix*) or Rooks (*C. frugilegus*). In the south they often nest together with the smaller herons, cormorants, etc. In such cases the Herons always try to occupy the topmost sites.

The Purple Heron (*A. purpurea*) has been recorded as nesting in small colonies in trees but such cases must be regarded as exceptional for the Soviet Union. Five is the maximum number of eggs recorded. The Great White Heron (*Egretta alba*) had greatly declined before the Revolution and was almost extinct in the Volga region and in Kazakhstan owing to excessive commercial exploitation. Since then full protection has been given and special sanctuaries have been established. As a consequence numbers have been largely restored, though it is still a rare bird in much of its area, e.g. in the lower Dniester and Dnieper regions. It is most numerous at the Volga delta. Here in the Astrakhan Sanctuary 180 young and adult birds were counted in 1934 and 1,070 in 1935. (Incidentally, it seems remarkable that more recent figures are apparently not available for this and other species in this important sanctuary.) The Little Egret (*E. garzetta*) was likewise almost extinct at the Volga delta at the beginning of the century, but in the autumn of 1935 about 22,000 birds were present in the Astrakhan Sanctuary. Its incubation period is given as about 25 days.

The Cattle Egret (*Ardeola ibis*) had previously been known to nest in the U.S.S.R. only in Transeaucasia, but nesting has recently been established in the Astrakhan Sanctuary and in the lower Atrek region in south-west Turkmenia. More than 50 nests have been found on occasions in a single tree. The number of eggs varies greatly from year to year and this "is probably connected with food conditions in its winter-quarters". From 4 to 9 eggs have been recorded. The Squacco Heron (*A. ralloides*) is numerous in the area of the lower Dnieper and along the Kura in Transeaucasia. In some years it is very numerous in the Astrakhan Sanctuary, but in others it is rare there. Elsewhere over its range it is rare. The Night Heron (*Nycticorax nycticorax*) is more frequently met with, over its normal range, than any other heron. In some colonies the number of birds exceeds 2,500. It sometimes forms colonies on its own but more often nests together with other marsh- or water-birds or Rooks.

The Little Bittern (*Ixobrychus minutus*) nests as far north as Leningrad. In places it is very numerous, particularly in the Ukraine. On the whole, though its range is less, it outnumbers

the Bittern (*Botaurus stellaris*) in the Soviet Union. The author, who has seen many nests of this bird in different parts of the U.S.S.R., concludes that its normal nesting-site is in dense growths of reeds or rushes where the nest is placed low down, sometimes touching the water, sometimes half a metre above it. But where the level of the water is subject to sharp changes some birds nest on bushes amidst the water vegetation or on the banks. It will eat the eggs and young of other birds, not only of Passerines but even of ducks and herons. The Bittern (*Botaurus stellaris*) is very numerous over much of its range. Its total numbers in the U.S.S.R. are "enormous" and during migration times it is often possible to put up 40 or 50 in the course of a single day.

NOTES

Unusual nest of Black-throated Diver.—The photographs reproduced on plate 40 show an unusual nest of the Black-throated Diver (*Gavia arctica*) which I found in June 1954 in central Sweden. This was built up on small rocks in the centre of a large lake where the water was shallow enough for a few reeds and two stunted trees to grow.

The Handbook quotes a record of an abnormal nest among willow branches that was a mass of weeds and peat built up to 10 inches above water level; the same work also gives on the authority of Dr. H. M. S. Blair that "in Scandinavia nests built of aquatic vegetation have been recorded, and are frequently in shallow water, as much as 5 to 10 yds. from land."

M. D. ENGLAND

[We have shown Mr. England's photographs to Dr. H. M. S. Blair who writes: "I do not think that such "built-up" nests can be very common in Scandinavia. Collett and Olsen (*Norges Fugle*, vol. III, p. 304) refer to one they regarded as unusual, but this was only about three inches (7 cm.) high. The one found by George Bolam and described in *The Handbook* was, I see from his notes made at the time, on the margins of a lake through which the Pasvik flowed, and therefore not in still water. The water-side was there fringed with scrub which grew well out into the lake. The nest might have passed for a grebe's; it was solidly built from the bottom in water about eight inches deep, and consisted of a large mass of weeds and peat-mud. Some five yards from land, it was firmly fixed among willow-bushes, on some decumbent branches of which it rested, and it was raised about ten inches above the water. The scrub grew to a height of two or three feet all round and about. I have myself found a Black-throated Diver's nest built amongst flooded birch-scrub on a lake: this was clearly a built-up structure, but I was unable to reach it. From the following note in *Ootheca Wolleyana* (p. 412) it appears that Wolley also found a built-up nest on the Pasvik: 'Nest on the level of the water, out of which it was built.'"—Eds.]

Shelduck breeding inland in Berkshire.—A pair of Shelduck (*Tadorna tadorna*) has been seen on a number of occasions in early summer during recent years in the neighbourhood of Windsor Great Park, Berkshire. Breeding has been suspected, but until 1954 it did not prove possible to obtain conclusive evidence.

On 30th May 1954 a pair of Shelduck, accompanied by six ducklings, was seen at close quarters on Great Meadow Pond in Windsor Great Park, and watched by us for a considerable period. The young appeared to be about a fortnight old. Visits to the pond on a number of occasions after that date failed to produce another sight of them, and it is not known what happened to them.

Great Meadow Pond, which is a lake of about 32 acres, is almost 50 miles in a direct line from the south coast, but between 30 and 40 from the Thames estuary. S. R. SOUTH and R. K. BUTLER

[Shelduck have nested inland several times in various midland or northern English counties—for example, Cheshire and Nottinghamshire—and breeding has been suspected in Northamptonshire, Cambridgeshire and elsewhere. This appears to be the first instance of the kind, however, in a southern inland county.—EDS.]

An earlier report of nestling Shelducks in Berkshire.—On 24th June 1950 J. H. Flint and I visited a gamekeeper who showed us two young ducklings which he had found unattended on his "rounds" that morning in Windsor Great Park, Berkshire. We immediately compared them with young Mallard (*Anas platyrhynchos*), of which he had several under his care, and they were quite different. The strange ducklings were white with bands of sepia, and the legs and bill were grey. After consulting various works of reference, including *The Handbook*, we were satisfied that they were young Shelducks (*Tadorna tadorna*). At different times I have observed at close range ducklings of Mallard, Wigeon (*A. penelope*), Tufted Duck (*Aythya fuligula*), and Shoveler (*Spatula clypeata*), also of Cape Shelduck (*T. cana*). The young birds in Windsor Great Park were almost identical with young Cape Shelduck (seen in the Wildfowl Trust collection), but completely different from the other species. Unfortunately the record was not confirmed, as the ducklings were not seen by anyone else.

I should perhaps add that Shelduck have been observed each summer since 1949 at Ham Island, Berkshire, which is about 3½ miles from Great Meadow Pond where breeding of Shelduck was proved in 1954. The place where we saw the ducklings in 1950 is only 1½ miles from Ham Island. IAN M. WALKER

Strange behaviour of Montagu's Harriers.—In early May 1954 a pair of Montagu's Harriers (*Circus pygargus*) settled on a moorland in Co. Durham where a pair had reared young in 1953. By 16th May they appeared to have chosen a site for the nest, and the male was bringing food to the female on or near it. On 26th May, after the male had called the female from the nest for the food-pass,

a second female was seen close to the area. (From now on the first female, which had a primary feather missing from each wing, will be referred to as "A", while the second, which had brighter plumage and a wider white rump than the first, will be referred to as "B"). Both females circled the nest area together, calling in agitation, and B was tolerated and accepted in the area by the original pair.

On 27th May the cock bird brought food to A, who left the nest to receive it. The nest by this time contained 4 eggs. B was again in the area, flying aimlessly about or resting on the ground for long periods. Later, when A left the nest at our approach, B joined her and both circled above us, calling together. B was still accepted by the pair close to the nest.

On 29th May A was incubating the eggs and B was still allowed in the vicinity without any interference.

On 10th June A was again flushed from the nest, and as on previous occasions B joined her and they flew together above the nest, calling loudly. When A returned to the nest, B settled on the ground about 70 yards away. On 17th June A was still incubating and the eggs were chipping.

On 23rd June B was lurking close to the nest and she was seen to take food dropped by the male. On this occasion A failed to rise in answer to the male's food-call and therefore received no food. Later in the day, A was flushed from the nest, which now contained 4 small young, but during our period of watching she took no food; instead she allowed B to answer the male's calls and take food from him in the air close to the nest.

On 27th June we found B on the nest for the first time. She was very excitable and noisy, and left the nest as we approached, sooner than A had been in the habit of doing. While B was flying overhead, A arose from a clearing near-by in the heather and tried to return to the nest. She was immediately attacked by B and later by the male and was driven off. She remained silent throughout.

On 4th July B was still with the young. During a food-pass by the male to B at some distance from the nest, A flew low over the nest as if to drop down there. The cock gave chase, and after a short skirmish A was driven off. This was the last time that A was seen, although the area was visited on a number of days in July.

On 31st July the 4 young were strongly on the wing, and receiving food in the air direct from the male and from B.

It was particularly noted that during the period of A's possession of the nest, B was tolerated in the area, both birds flying together and calling when alarmed. When the usurping female B took over the young, A was attacked on every possible occasion, and she remained silent. The birds were watched by many ornithologists, including Mr. G. W. Temperley and Mr. F. G. Grey.

In conclusion, it may be of interest to add that in early May 1954 another pair of Montagu's Harriers had settled on a moor about 3 miles away, and they were occasionally watched there until the 12th, when the male was missing. The female was seen until the 16th, when she also disappeared. It occurred to us that this female, having lost her mate, might be the usurping bird B described in the events above.

CAROL GREENWELL, JOAN GREENWELL and NANCY BELL

Osprey in December in the Isle of Wight.—At Yarmouth, Isle of Wight, on 4th December 1953, an Osprey (*Pandion haliaetus*) was seen by Messrs. E. and C. Doe. The following morning they, together with several other people and myself, again saw this bird, which I considered to be immature. There appears to be no previous December record of the Osprey in Britain.

M. C. ADAMS

Osprey in February in Radnorshire.—On 12th February 1955 I disturbed an Osprey (*Pandion haliaetus*) off an old stump in the middle of our pond at Rhayader, Radnorshire. It flew into an oak tree 200 yards away, where it was immediately attacked by a pair of Carrion Crows (*Corvus corone*), after which it perched in a beech tree, where I had very good views of it. I understand that wintering records of this species are very unusual.

COLIN S. HUGHES

Display of Snipe.—On 11th August 1954 at Cley, Norfolk, a number of Snipe (*Capella gallinago*) were observed from a photographic hide at very close range. At one time there were 16 birds within 30 feet of the writer. During the greater part of the time they were under observation they were feeding in the normal way, but when one bird approached another too closely, a remarkable display (threat?) was performed by the individual being approached. The bird would suddenly crouch with fully fanned tail raised beyond the vertical and bent forward over the head which was lowered so that the beak lay parallel to and touching the ground. The wings, with secondaries and coverts raised, were folded behind the tail. The bird would then quiver for a moment and spring vertically upwards or slightly sideways, rising about a foot from the ground. The whole performance lasted scarcely 2 seconds, and immediately after landing, normal feeding was resumed. The accompanying sketch shows the initial posture.

Since one particular area of moist ground, from which I had previously removed a pile of old and decaying reed and sedge, was preferred to other adjacent feeding areas, the concentration of birds within this patch of some 2 yards square was considerable. Often there were as many as 10 Snipe on this small area, and so the display described was frequent. For fully 20 minutes the

ground seemed to pulsate with Snipe jumping upwards at intervals of less than a minute.

I have seen and filmed this kind of display before and since. In August 1953 it was noted several times when Little Stints (*Calidris minuta*) came to feed in an area occupied by Snipe. It has also been observed when Snipe were feeding with Ruffs (*Philomachus pugnax*). On yet another occasion, when I was



DISPLAY POSTURE OF SNIFE (*Capella gallinago*): CLEY, NORFOLK, AUGUST 1954
(From a sketch by R. P. Bagnall-Oakeley)

watching Wood Sandpipers (*Tringa glarcola*) from a distance, I saw Snipe that were feeding behind them, and in cover, spring into the air and at the time I assumed they were fighting. More recently, on 23rd August 1954, Field Marshal Viscount Alanbrooke was in one of my hides and watched the same display. I saw it again on 31st August, when 2 or 3 Snipe were feeding with some Greenshanks (*Tringa nebularia*). R. P. BAGNALL-OAKELEY

Aggressive display of young Curlew.—On 30th May 1952 at Appleby, Westmorland, my attention was drawn to the commotion made by a pair of Curlew (*Numenius arquata*) about 200 yards away. Upon investigating I found that a cow was grazing around a bog myrtle bush where one of the brood of young Curlews was sheltering. The adult birds were very aggressive, strutting up to the cow with wings raised and also flying at it. Upon my approach the cow and the parent Curlews moved away, and I found the one

young one which was less than a week old. Each time I approached the bird (four occasions in all), it adopted an aggressive attitude with wings raised and beak and neck extended. This behaviour, which seems unusual in so young a bird, appeared to be an imitation of the attitude of the parent birds towards the ewe.

R. W. ROBSON

Unusually large numbers of Black-tailed Godwits in Hampshire.—The gatherings of Black-tailed Godwits (*Limosa limosa*) in Chichester Harbour on the borders of Hampshire and Sussex have previously received attention both in *British Birds* (*antea*, vol. xli, p. 219; vol. xlii, p. 188) and in the county reports covering the area, but the maximum number does not appear, even on Thorney Island, to have exceeded 700-800.

On 19th October 1952 in the north-west corner of Chichester Harbour, near Tournebury Ring, Hampshire, I saw a flock of some 4,000 waders, which I estimated was made up of 1,500 Black-tailed Godwits, 1,000 Curlew (*Numenius arquata*) and 2,500 Redshank (*Tringa totanus*). It was about 12.30 p.m. and there was a mid-day spring tide which undoubtedly caused the birds to gather in the fresh marsh. The birds came in in flight after flight from a considerable height, and it was interesting that throughout the whole arrival which we watched for about an hour, a pair of Peregrines (*Falco peregrinus*) were in attendance, soaring very high but never attempting to interfere.

On 29th and 30th August 1953, there were about 900 Black-tailed Godwits at the same place, together with about 1,000 Curlews. Many of these were still showing signs of summer plumage.

KEITH SHACKLETON

Unusual feeding method of immature Sanderlings.—Whilst watching a small flock of immature Sanderlings (*Crocethia alba*) feeding on a sandy shore at Abersoch, North Wales, in August 1953, I observed the following behaviour. The birds were feeding in soft dry sand just above high-water mark, and were thrusting their bills deep into the sand and running forward for about a yard with their bills still embedded. In this way they ploughed a little furrow in the sand and then rapidly retraced their steps, pecking on either side of the furrow. Unable to see, through binoculars, what the birds were unearthing, I chose a small piece of driftwood, fashioned it approximately to the size and thickness of a Sanderling's bill, and on hands and knees likewise ploughed some furrows in the sand, using the stick as the birds were using their bills. Each time I turned up a mass of Sandhoppers (*Talitrus saltator*).

Although *Talitrus* is commonly taken by Sanderlings when the hoppers are on the surface, I have never before observed this method of "ploughing" them out of dry sand.

STUART SMITH

Common Tern playing with object in flight.—With reference to previous notes on birds "playing" with objects in flight (*antea*, vol. xliii, p. 333; vol. xlv, p. 69; and vol. xlvi, p. 378), I wish to record the following observation made at Gailey Pools, Staffordshire, on 2nd May 1954, as none of the other records has referred to any species of tern.

I was watching two Common Terns (*Sterna hirundo*) flying over the pools when I noticed one of them pick up something with its bill from the surface of the water. The bird then flew up to a height of about 30 feet, released the object and then swooped down to retrieve it some 10 feet above the water.. The process was repeated, and after an interval it happened a third time. On each occasion I was able to see the object falling through the air.

PETER R. POWELL

Sandwich Tern playing with object in flight.—On 18th September 1954, at Rosyth, Fifeshire, in an area of fresh marsh, a Sandwich Tern (*Sterna sandvicensis*), carrying what presumably was a fish of about 2 inches long, was chased vigorously and closely for a minute or more by a Common Gull (*Larus canus*). This rather protracted chase was unsuccessful, and almost as soon as the gull had abandoned it, the tern dropped what it was carrying, but dived and caught it again in the air. This it repeated 8-10 times, a couple of times retrieving the object from the water when it failed to catch it in the air. The game appeared to end with the tern failing to recover the object from the water, but I am not sure of this. Mr. John Hoy also witnessed the incident.

P. A. D. HOLLOM

A distraction display of the Nightjar.—By imitating the usual "quoiek" call of the male Nightjar (*Caprimulgus europæus*) it is possible to call these birds up, as soon as they become active at dusk. I was doing this in June 1953 on a bracken-covered hill-side in Anglesey, when one of the birds alighted on a path at my feet, about 2 yards away. It then leaped several times into the air to a height of about 2 feet, each leap being accompanied by a single jerking wing-beat. The bird then waved each wing in turn lamely in the air.

This leaping does not appear to have been described before, though the wing-waving is a common feature of the nuptial, aggressive and distraction displays of the Nightjar. STUART SMITH

Swallow roosting in bracken.—On the evening of 2nd July 1952 I was on Caldy Hill, Wirral, Cheshire to hear and observe Nightjars (*Caprimulgus europæus*). At 2205 hours B.S.T. the last Hirundines were seen in flight. However at 2220 hours whilst walking along a narrow path bounded by waist-high bracken (*Pteridium aquilinum*), I disturbed a small bird which had been

roosting therein. As it rose up against the last pale streaks of the north-west horizon, it was clearly seen to be a Swallow (*Hirundo rustica*). I can find no mention of bracken as a roost for Swallows.

K. D. G. MITCHELL

Magpie eating rubber glove.—On the evening of 20th July 1954, an obviously tame Magpie (*Pica pica*) in my garden at Northolt, Middlesex, was seen to discover a perished rubber surgical glove stuck to the roof of the coal-shed. It immediately began to tear off pieces and eat them. It was particularly noted that these were not just torn and dropped. It continued to swallow pieces for about ten minutes before moving off to a neighbouring garden. I learnt later that it had escaped some weeks earlier from captivity near-by.

A. G. HOCKEN

[This observation is of interest in view of the now well-known occurrences of pieces of rubber in the eastings of Rooks (*Corvus frugilegus*) and Jackdaws (*C. monedula*). Several notes on this subject were published in *British Birds* some years ago (*antea*, vol. xlii, pp. 52 and 384; vol. xliii, p. 31) and references were given to other similar records.—EDS.]

Nuthatch burying a nut.—On 20th August 1953, near Trowbridge, Wiltshire, while I was sitting in my car within four yards of the bole of a conifer, a Nuthatch (*Sitta europæa*) flew on to the tree with a hazel-nut in its bill and started to explore the cavities in the bark, presumably with the idea of hiding the nut. No suitable cache was found and the bird came down the trunk head first and thrust the nut into the grass growing at the foot. However, it immediately withdrew it and moved a little farther round the base of the tree and once again pushed the nut deep down between the grass and the foot of the tree; this was accomplished by several hard thrusting movements of the bill. Afterwards the bird covered the hiding-place with beakfuls of dry grass which it smoothed down with slow, deliberate sideways-motions of the head and bill.

The whole operation reminded me very much of the performance which my West Highland White terrier goes through when burying a biscuit.

GEOFFREY L. BOYLE

Early Redstarts in S. England in March 1955.—It is evident from the several reports that have reached me that there was a wide-spread (and possibly quite considerable) fall of Redstarts (*Phœnicurus phœnicurus*) on the south coast of England between Kent and Dorset during the last few days of March 1955. It is of course quite exceptional for Redstarts to arrive at all before the beginning of April. At Dungeness Bird Observatory, Kent, we trapped and ringed an adult male on 26th March and another was seen. On 27th March a male and a female were seen on the Sussex Downs near Friston by John Platt and Miss A. H.

Platt. On 30th March a male was watched in a garden at Ferring, near Worthing, Sussex, by S. H. Chalke, and on 31st March B. W. Renyard saw a female Redstart on Butser Hill, near Petersfield, Hampshire. Meanwhile, at Portland Bill, Dorset, a male was seen on 29th, 30th and 31st March, and there was a female there on 1st April (N. P. Ashmole, *per* A. J. Bull). On 31st March a male was clearly seen in the neighbourhood of Bradford Abbas, near Sherborne, Dorset, by Miss M. D. Crosby (*per* K. B. Rooke).

It would be interesting to know if any other Redstarts were recorded during March 1955. I. J. FERGUSON-LEES

Melodious Warbler on Bardsey.—At 16.30 hours on 27th August 1954 a Melodious Warbler (*Hippolais polyglotta*) was caught in the Lane Trap on Bardsey Island, Caernarvonshire. My first impression when it was brought to me was of an olive and pale creamy-yellow bird with bluish-grey legs and a large bill; the latter was a particularly striking feature. When it was first taken out of the carrying bag it made three or four harsh, almost grating, notes, at the same time raising and lowering its crown-feathers; the bird did not emit any further sounds while it was in captivity. After a detailed description had been taken and the bird had been weighed, measured and ringed, it was put in a small cage and several coloured sketches of it were made; finally it was taken outside and released at about 18.15 hours. The wing (primaries straightened) measured 63.5mm. No field description is available as the bird was not seen before it was trapped nor was it seen subsequently. It was seen in the hand by A. Till, H. Green, A. Scroop, P. Morris, M. Jones, J. G. Williams and D. Ranger.

ROY TUEARLE

Melodious Warbler on Lundy.—A Melodious Warbler (*Hippolais polyglotta*) was trapped on Lundy on 31st August 1954. Like a large sized Willow Warbler (*Phylloscopus trochilus*) its most striking difference from that species in the hand was its heavy broad-based bill. The under-parts were a very pale yellow, so it may possibly have been an immature bird. It was distinguished from an Icterine Warbler (*H. icterina*) by its wing-length (68 mm.) and its wing-formula.

BARBARA WHITAKER

Melodious Warbler in Dorset.—A Melodious Warbler (*Hippolais polyglotta*) was caught in the large Heligoland trap at Portland Bill, Dorset, on 4th September 1954. A full description and measurements were taken of the bird in the hand, and it should be stated here that both wings were 62 mm. long. At first glance in the hand the most striking character was the large bill, which gave the bird quite an Acrocephaline appearance. Unfortunately, the bird flew into thick cover on release, after being ringed, and was not seen again.

This is the first record of this species in Dorset, and would appear to be the tenth definite occurrence in Britain.

It is of interest to add that on 19th September 1954 what appeared to be a Melodious Warbler was watched at Portland Bill by the Misses T. F. Almack and M. D. Crosby, Mr. and Mrs. F. Clifton, J. L. Bradbeer and J. S. A. A detailed description was obtained. It is of course difficult to separate this species from the Icterine Warbler (*H. icterina*) in the field, but the fact that the wings appeared distinctly short tends to rule out the latter species. Unfortunately the broad mandibles characteristic of the genus *Hippolais* were not noted.

A. J. BULL and J. S. ASH

[We have received full laboratory descriptions of the three Melodious Warblers trapped at Bardsey, Lundy and Portland, and these confirm the identifications.—EDS.]

Bonelli's Warbler on Lundy.—On 1st September 1954 a Bonelli's Warbler (*Phylloscopus bonelli*) was trapped on Lundy. Before being caught, the bird was seen briefly at the mouth of the trap, when its generally pale colour was the most outstanding feature. The following description of it was taken in the hand.

Head grey. Ear-coverts greyish-white. Indistinct whitish stripe above eye. Nape, hind neck and mantle grey blending to brownish olive-green on lower mantle and back. Rump and upper tail-coverts, yellowish-green. Rectrices olive-brown with outer webs yellow. Under-parts white. Wing-coverts olive-brown. Primary and secondary feathers olive-brown with leading edges yellow giving the closed wing a yellowish appearance. Legs brown. Iris dark brown. Bill horn-coloured.

After a preliminary examination, the bird was put into a box for transportation to the Old Light, so that a more detailed study could be made. Unfortunately it escaped, but having examined a series of skins at the British Museum (Natural History) I have no doubt about its identification. This is the second record for Britain.

BARBARA WHITAKER

Golderest roosting in disused boring of woodpecker.—At weekends during the last three months of 1954 and with the assistance of a helper, A. Smith, I was regularly visiting certain woodland areas to ring woodpeckers by trapping them at their roosting-holes in the last hour of daylight.

During these expeditions, one is always on the lookout for additional borings which may be used for roosting, and on the 14th November 1954, whilst covering the National Trust mixed woodlands at Hydon's Ball, Godalming, Surrey, A.S. drew my attention to a drilling in the region of 25 feet up a decayed silver birch. It was of no real interest, as in any event the height of the hole well exceeded the limit at which our equipment could be operated. Notwithstanding this, however, the tree received the

usual tap and to our surprise a Goldcrest (*Regulus regulus*) flushed from the boring. In all, the Goldcrest flushed from this hole on four separate occasions, the last time being on the 18th December.

It afterwards occurred to me to check the incident against *The Handbook*, but no mention was made therein of hole-roosting by this species. Unfortunately it was not possible to check whether the drilling led to a developed cavity or was merely a horizontal boring, and indeed had a cavity existed there could have been no proof that the Goldcrest actually roosted within it.

On 14th November, the day was a still one and I am advised that the temperature locally was above average for the date. Wintry weather not having set in, it seems reasonable to suppose that the choice of the roosting-site could not have been due to severity of conditions.

L. J. RAYNSFORD

Goldcrest eating bread-crumbs.—On 30th December 1954, and again on 7th and 18th January 1955, I saw a Goldcrest (*Regulus regulus*) visit a bird-table and pick up and eat small particles of white bread. On the first of these days it appeared on the bird-table twice for a period of a few seconds only, but on the last date it remained for some four minutes. A Goldcrest (probably only the one bird was involved) had been hunting in the bushes round the bird-table on other occasions, and I once noticed it on the ground apparently picking up gnats. The weather on 30th December was very mild, and various insects could be seen flying about, so that it was all the more remarkable that a Goldcrest should resort to eating bread.

W. M. LOGAN HOME

Spotted Flycatchers eating berries.—On 29th August 1954 in Osterley Park, Middlesex, I watched a Spotted Flycatcher (*Muscicapa striata*) snap a yew berry in mid-air, fly to a branch, grip the berry in its claw and eat it by pecking off small shreds. Unfortunately I was unable to spare the time to see if the bird repeated the performance.

M. E. COOPER

Grey Wagtail rearing three broods.—During 1953 a pair of Grey Wagtails (*Motacilla cinerea*) reared three broods in buildings near Duns, Berwickshire. The first nest was built under the roof of an outbuilding at the end of March, which was an unusually warm time, and the first egg was laid on 12th April. Only two young were hatched from five eggs—on 29th April—and these flew on 11th May.

The second and third broods were reared in a nest inside a wooden garage about five yards away. The second brood of three young left the nest on 24th June, and the third brood flew on 1st August, one of the five young being left dead in the nest.

In the previous year (1952) both Grey and Pied Wagtails (*M. alba yarrellii*) nested at the same time in this garage, only three feet apart.

A. G. LONG

Unusual nesting-site of Grey Wagtail.—On 27th June 1953 at Tulira, Ardahan, Co. Galway, I saw the nest of a Grey Wagtail (*Motacilla cinerea*) which was built in a rambler rose bush growing against the garden wall. The nest was not in contact with the wall and was about five feet above the ground. The site was 100 yards from the nearest running water which was beyond a high wall. Young were in the nest.

ROBERT F. RUTTLEDGE

Breeding behaviour by House Sparrows in December.—On 3rd December 1953, at 12.15 p.m., in Reading, Berks., I saw a ♀ House Sparrow (*Passer domesticus*) fly into an apple tree and land by the old nest of a Blackbird (*Turdus merula*). The nest was fairly dilapidated and had lost its cup shape, being more like a saucer. The sparrow went to the nest and settled down in it, moving round and shuffling as if sitting on eggs, or more likely, as K. E. L. Simmons suggested to me, making nest-shaping movements. It then rose and sat preening on the edge of the nest, after which it flew off. A little later, a male and two female House Sparrows came to the tree. The male was performing the typical courtship display, but the females went straight through the tree to the nest, one getting in. They "took it in turns" to enter the nest, each acting as though it was settling on eggs or young. Whilst one was in, the other would stay by the nest or hop round and under it on the twigs from the supporting branch. Once both got in together and on, I think, two other occasions one pushed the other off and immediately got in. Once one carried out these activities extremely intensely, with accompanying wing-flicking movements. The male had soon stopped displaying and was sitting quietly in another part of the tree. About two minutes after they arrived they all flew off.

This behaviour was probably due to the unusually mild winter when the normal autumn recrudescence of sexual behaviour among House Sparrows was prolonged.

At 1.15 p.m. on the same day, I saw an adult male Blackbird standing on the edge of the nest. It stood for some time looking into it and round about. It then got into the nest and twice made as if to sit down, but each time straightened up. It stood looking around for about $\frac{1}{2}$ minute then got out and went into the tree, flying off soon afterwards.

ROBERT GILLMOR

[We have shown this note to D. Summers-Smith, who has for some years been making a particular study of the House Sparrow. He comments as follows: "I would suggest that these were first-year birds 'nest-site prospecting'. From October to the middle of December, or even later if the weather remains mild, groups of first-year birds may be seen 'prospecting' at suitable sites. I have seen this at old House Sparrow nests in trees, even when very little of the nest remained."—EDS.]

REVIEW

ICONOGRAPHIE DES OISEAUX DE FRANCE. By PAUL BARRUEL. Text by P. BARRUEL, J. DORST, P. ENGELBACH, R. D. ETCHECOPAR, FR. HUE, CHR. JOUANIN, G. OLIVIER and J. RAPINE, under the direction of PROFESSOR J. BERLIOZ. (*Memoires de la Société Ornithologique de France et de l'Union Francaise*, No. 5: 1st Livraison 1953; 2nd Livraison 1954).

WE know of no precise counterpart to these two slim volumes (to be followed by a third), issued as supplements to Volumes XXIII and XXIV of *L'Oiseau et la Revue Francaise d'Ornithologie* during 1954. Each consists of twenty coloured plates, mostly depicting three to five species, inserted quite loose among a couple of pages of descriptive text in stiff paper covers about $9\frac{1}{4} \times 7\frac{1}{2}$ ins. The result is not at all convenient for the library, but the plates are excellently suited for mounting as pictures, for which their high pictorial quality and scientific accuracy recommend them. Once again we find a foreign colour-printer achieving with apparent ease a standard rarely found among comparable works produced in Great Britain, although the blues are at times too blue and the blacks are not always black enough. (The plate of the Manx Shearwater is quite unrecognisable owing to the brown instead of black upper-parts, but as the Scoter on the same plate is correct this must be an aberration by the artist, not the printer). Of particular interest are four sepia plates of flying birds of prey including Lammergeier, Griffon, Black and Egyptian Vultures, Bonelli's and Short-toed Eagles, Honey Buzzard, Black Kite and other forms. Most of these are well done, the least satisfactory being the Osprey which is probably the easiest. Among the coloured plates of special interest here are those of the Short-toed Eagle, Middle Spotted Woodpecker, Rock Sparrow and Black-eared Wheatear. The claim by M. Etchécopar in his foreword that these plates are exceptional and capable of facing the most severe comparisons is on the whole borne out, and we must be grateful for his successful efforts to have them made available in this form.

As would be expected from its authors the text is authoritative but it is inevitably too brief to convey much that is not already well known.

The work as a whole seems well designed to further the encouraging growth of interest in bird life among the French, but, unlike many such works, is of sufficient merit to be also of European interest.

E.M.N.



NOTICE TO CONTRIBUTORS

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BRITISH BIRDS



JULY 1955

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BRITISH BIRDS

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Cover Photograph by G. K. Yeates: Reed Warblers (*Acrocephalus scirpaceus*).



BRITISH BIRDS

DO ENGLISH WOODPIGEONS MIGRATE ?

By DAVID LACK

(*Edward Grey Institute, Oxford*)

and M. G. RIDPATH

(*Ministry of Agriculture and Fisheries, Tolworth*)

INTRODUCTION

THE object of this short paper is to draw attention to a curious problem in the hope that others will help in solving it. The observations here described, made independently by Lack round Oxford and by Ridpath in Kent and Sussex, cannot be satisfactorily interpreted until more is known from other parts of England. At first, each of us supposed that we had chanced on a big autumn migration of Woodpigeons (*Columba palumbus*), but now we are doubtful.

The earlier literature on the migration of Woodpigeons was reviewed by Alexander (1940) and re-summarized by Snow (1953). So far as England is concerned the evidence was conflicting. In the autumn, there might be an arrival from Scandinavia into East Anglia and from north-western France into S.E. England, while a S.W. movement was seen for many years in the Stour valley, Worestershire. That is all, and as yet it is quite uncertain whether the apparent increase in Woodpigeons in southern England in autumn is due to purely local aggregation or to migration and, if to migration, whether this comes from northern Britain, Scandinavia or France.

OBSERVATIONS ROUND OXFORD (D. LACK)

In 1953, during an autumn watch for visible migration on Boars Hill, just outside Oxford, big flights of Woodpigeons were noted going south in the early mornings during the last few days of October. At first they were dismissed as feeding movements from a roost, but over 400 individuals passed on 30th October and they flew high like migrants. As a result, visits were made by other members of the Edward Grey Institute to Beacon Hill on the

Chilterns, some fifteen miles to the east, and to the Goring Gap a similar distance S.S.E., and here also flocks of Woodpigeons were seen flying south in the early mornings. The observations could not be continued into November.

In 1954 there was a similar big increase in the number of Woodpigeons flying south over Boars Hill at the end of October, the first big flight, of over 400 in an hour, being on 30th October. Moreover, in the next fortnight the number rose much higher, about 4,500 passing south in one hour on 8th November. On some fine and clear days all the birds came over in a few huge flocks just after first light, but in poorer weather they passed in smaller flocks over an hour or two. They did not come on foggy mornings. In 1954 southward movements, but involving smaller numbers, were again seen at Beacon Hill in the Chilterns and also at the White Horse Hill on the Berkshire Downs. This suggested that a true migration was involved, as did the fact that Woodpigeons did not return over Boars Hill in the afternoons. However, they were later found roosting in huge numbers in Wytham Wood, only four miles north of Boars Hill, arriving chiefly from the west, and later observations showed that in the afternoons big flocks returned north over the plain far to the west of Boars Hill, though not over the hill itself. Hence at least part of the movement was to and from a roost. The late autumn movement south-westwards in the Stour valley, Worcestershire, reported by Beeston (1931) may well have been of the same nature. The Stour valley runs mainly south but turns south-west where he watched, so the birds might have been deflected somewhat from their true line of flight where he saw them.

While much of the evidence suggests that the Boars Hill and other birds were flocks moving out of and back to a roost, there was a great increase in numbers in late October and even more so in early November, and it is curious that, wherever the observer went near Oxford, Woodpigeons were seen flying south in the early morning and not in some other direction. A watch two miles north of the Wytham roost showed that no birds left in this direction. Is it possible that the movement is in some way a mixture of a diurnal flight from a roost and a southward migration?

OBSERVATIONS IN KENT AND SUSSEX (M. G. RIDPATH)

During the last two days of October 1952, an apparent coasting movement of Woodpigeons (4,200) was seen in the early morning at Beachy Head (Lack, 1954). These high-flying, tightly-bunched flocks gave the appearance of true migrants. Although the movement was along the coast there was a tendency for flocks to turn to sea southwards and continue out for half a mile till they were hardly visible, and then turn back to the land and resume their coasting. Later in the morning the movement stopped and many were seen feeding in valleys near-by.

In the last fortnight in October and first fortnight in November

1953, eight points on the S.E. coast between North Foreland and Selsey Bill were watched in the early mornings by a team of observers, which included members of the British Trust for Ornithology, the London Natural History Society, the Ministry of Agriculture and Fisheries and others. Woodpigeons were seen only at Langdon Bay near South Foreland (eight days) and Beachy Head (two days). The movements at Beachy Head were like those of 1952. At Langdon Bay three things seemed to be occurring: a S.W. coasting movement (40%), a departure S.-S.E. out over the sea (38%) and an arrival from the sea N.N.W. (22%). All the Woodpigeons which were seen to fly out to sea eventually turned back, although some did so beyond the range of the naked eye and could only be followed with binoculars. On their re-appearance at the coast they gave the impression of incoming migrants and would have been recorded as such had their previous movements not been known.

This tendency to fly out to sea in a southerly direction, sometimes beyond vision, and then to return, probably explains the 22% which appeared to arrive from the sea. It may well be the explanation, also, of other apparent arrivals in autumn on the S.E. coast, those for instance at Pett Level (Wilkinson, 1950) and at the Seven Sisters (S.E. Bird Report 1947). Further slight support for this explanation comes from two morning watches on 14th and 15th November at Cap Blanc Nez in the Pas de Calais, about 20 miles S.E. across the Channel from Langdon Bay. There was no sign of a Woodpigeon movement there, although another observer at Langdon Bay on 15th November saw about 500 which appeared to arrive from across the Channel.

In November 1954 a team of four from the Ministry of Agriculture watched for the whole month from the cliffs at St. Margaret's Bay, also from a ridge 3 miles inland, and from the South Goodwin Light-Vessel at sea 4 miles east of St. Margaret's, till she was wrecked near the end of the watch on 27th November. Each had a wireless transmitter to warn the others of Woodpigeons moving between them and thus to trace the course of particular flocks. Until 8th November small numbers of Woodpigeons drifted in low to feeding-grounds in the area in the early morning, but on 9th November much bigger, high-flying, closely-packed flocks were seen moving to the coast from the N.W. and the same occurred on every morning thereafter, except on six of fog, rain or high winds, till 1st December when the watch ended. The highest totals were 2,100 on 14th November and 2,270 on the 29th. On arriving at or near the coast most of these flocks turned in any direction except over the sea, but a few flew out to sea and back again as in the previous years. After 23rd November the percentage which settled locally increased from 30% to 86%. The watcher on the South Goodwin Light-Vessel saw no Woodpigeons during November.

The origin of many, though not all, of the early morning flocks was traced to a roost, to which they returned in the evenings, 5 miles inland at Waldershare. This has continued in use till the time of writing in January 1955. Some observations at the roost and to the north and south of it on the same day suggested that in the mornings all Woodpigeons left between east and south, none to the north or west. The number in the roost was estimated at 1,800 on 22nd December.

It seems clear from these observations that the apparent arrivals of Woodpigeons in the late autumn into Kent from the Continent, from either east or south, do not take place, and the same probably holds for Sussex. Whether all our Woodpigeons were flocks moving out from local roosts we cannot say. Many certainly were. If so, the origin of these roosts and their sudden appearance during early November is still a puzzle. Although they might be purely local aggregations, the fact that the flocks show a southerly bias in their morning movements, which may even take them some distance out to sea, suggests that they may be the vanguard of a migratory movement from the north with which the roosts are somehow linked. In this connection there is a significant observation at Tilbury, by D. F. Owen and D. W. Snow, of big flocks of Woodpigeons flying south across the Thames into Kent in the early morning of 4th November 1954, only a few days before the south Kent movements began.

CONCLUSION

To conclude, large flights of Woodpigeons southwards in the early mornings in late autumn have been seen in various places in England. The birds are definitely coming from roosts but normally fly south, not in some other direction, so it seems possible that the movements are connected in some way with migration. Their significance cannot be determined without observations from other parts of England. For this purpose M. G. Ridpath and R. K. Murton are organising an enquiry through the British Trust for Ornithology for the autumn of 1955, and anyone interested in helping should write to them at the Ministry of Agriculture and Fisheries, Hook Rise, Tolworth, Surbiton, Surrey.

REFERENCES

- ALEXANDER, W. B. (1940): "The Wood Pigeon". *J. Roy. Agric. Soc. Eng.*, 100: 92-100.
BEESTON, T. J. (1931): "Migration routes of Wood-Pigeons in Worcestershire." *Brit. Birds*, xxiv: 326-328.
LACK, D. (1954): "Visible migration in S.E. England, 1952." *Brit. Birds*, xlvii: 1-15.
SNOW, D. W. (1953): "Visible migration in the British Isles: a review." *Ibis*, 95: 266.
S.E. Bird Report 1947: 29-30.
WILKINSON, A. DENBY. (1950): "The annual immigration of the Wood-Pigeon and Stock-Dove on the coast of East Sussex." *Brit. Birds*, xliii: 233-238.

FIELD-NOTES ON SOME ASIAN LEAF-WARBLED— I

By H. G. ALEXANDER

ONLY three species of leaf-warblers or willow-warblers* (*Phylloscopus*) are common and regular visitors to Britain, but twelve forms, belonging to nine different species, have been recorded at one time or another. These, however, represent less than half the genus. In his *A Systematic Review of the Genus Phylloscopus*, published in 1938, C. B. Ticehurst recognized thirty species, and sixty-seven forms. Some of the races are as easy as (or no less difficult than) some of the species to identify in the field. It is not suggested that any large proportion of those not now on the British list are ever likely to occur. But Pallas's Leaf Warbler* (*Ph. proregulus*) has reached Britain twice and Heligoland at least three times from Central Asia, whilst the Crowned Warbler (*Ph. coronatus*) from north-east China, and the south-western race of the Greenish Warbler (*Ph. trochiloides nitidus*)—often known as the Green Warbler—from Transcaspia or further east, seem to have reached Heligoland once each; so that almost anything is possible. There may accordingly be value in drawing attention to some of the closely related species and races not known in Europe; and in particular in suggesting points of plumage, structure, behaviour or call-note, which should be specially looked out for.

Every coastal trapping-station should no doubt, and I hope does, possess a copy of C. B. Ticehurst's monograph. Much of what follows can be found there. But Ticehurst himself indicated that what was most needed to supplement his treatise was further field-work. A too little-known ornithologist, W. E. Brooks, who worked on the group in India in the 1870's, convinced himself that each species or race had a distinct call-note. My own experience in recent years leads me to doubt this. Call-notes are undoubtedly important, but as we know with our two commonest English leaf-warblers, it is sometimes difficult to distinguish even distinct species by the call-note alone; yet, on the other hand, there is variety between the call-notes of some of the several races, at any rate in the case of the Chiffchaff (*Ph. collybita*).

Since Brooks's day, little field-work seems to have been undertaken by Indian ornithologists on this group of warblers, but they have always attracted me; and in the past ten years I have spent many hours watching individuals in the field, both in summer-quarters in the Himalayas and in winter-quarters in the Indian plains. Naturally, there are still a number of species that I do not know: and as it happens, one of these is a bird on the British list, namely Radde's Warbler (*Ph. schwarzi*). It normally winters further east than India. I hope, however, that what I may say will be a useful supplement to the information already available.

Ticehurst, in his key to the genus, separates in the first place

* See appendix on English names, p. 298.

the species which have a wing-bar from those which have not. This is a convenient (but as I shall shortly show somewhat dangerous) way of splitting the genus in two, and I am following him in it. This paper will be concerned solely with those species that have a wing-bar. A second paper will discuss the species that have no wing-bar, together with some small brown warblers of other genera, *Hippolais* and *Acrocephalus*, which in some species approximate very closely to the browner *Phylloscopi*.

The species on the British list which normally have wing-bars are four:— *Ph. borealis* (Arctic), *Ph. trochiloides* (Greenish), *Ph. inornatus* (Yellow-browed) and *Ph. proregulus* (Pallas's). In field-work I have found that a second broad division of the genus, and especially of those with wing-bars, is as between the larger birds with longer tails and the smaller with shorter tails. It happens that the first two of the above are larger, the other two smaller. It will be convenient to discuss them in these two sections (A and B).

A—LARGER LEAF-WARBLEDERS WITH WING-BARS

The Greenish Warbler (*Ph. trochiloides*) has, as a species, a vast breeding-range, having been found nesting from the Baltic coast in the north to the Caucasus in the south, right across Russia and Asia to the Pacific coast on the Sea of Okhotsk. But it seems to be as variable a species as the Chiffchaff. Ticehurst gives six subspecies. I have seen birds in winter in India which do not fit readily into any of these. Those that have occurred in Britain have all been identified as *Ph. t. viridanus*. It is possible, however, that *Ph. t. nitidus* (which may be a distinct species), and *Ph. t. plumbeitarsus*, the latter a wide-ranging form, might occur. *Viridanus* is the common form in India in winter; but several other forms are also recorded. *Nitidus*, which winters in south India and Ceylon, is well-called the Green Warbler, for it is a richer and yellower green than any of the rest; moreover, it has a very clearly marked wing-bar. *Plumbeitarsus* is a bird I have never seen; it is darker and greener on the mantle than *viridanus* and should show two narrow pale wing-bars. It must look a good deal like the Arctic Warbler in the field. In the whole species there seems, however, to be a good deal of individual variation, not all of it due to abrasion. Some individuals do not fit the English name (Greenish). In *viridanus* as often as not the wing-bar is scarcely visible or totally invisible in the field. Moreover, often, even in bright sunlight, individuals look quite brown, without a trace of green.

Here is a quotation from my notes: "Between 11th and 17th April 1953 I was staying at Ootacamund (Nilgiri Hills, S. India) and I was surprised to discover a number of *Phylloscopi* still in their winter-quarters. I not infrequently heard the double call-note of *Ph. trochiloides*. With perhaps one exception, those I saw seemed to be totally lacking in green. The first I saw, in a bush below me, I at first mistook for an *Acrocephalus*. The underside

was nearly white (very slightly grey, or buffy-grey), upper-parts pale brown, edges of secondaries tinged with yellow. Superciliary dirty white, fairly distinct. One short, whitish wing-bar. Bill brown, lower mandible with little or no orange, perhaps variable; legs brown." These would probably all be referable to *viridanus*. In other parts of India I have seen individuals of this same race with olive-brown or even almost olive-green mantle, the wing-bar (as already noted) invisible, and the lower mandible a rather bright orange at the base.

I have thought it important to draw the attention of British observers (especially those who may have opportunities of handling the species at trapping-stations) to the great variety of this species. Let me add that in my experience, one of the most reliable field-characters is the bright coloured lower mandible. The note already quoted from the Nilgiris provides the only exception, in my experience, to the reliability of this character. It applies, I believe, to all the three races that might occur in Britain.

The song of the Greenish Warbler, excellently described by R. Thearle (*antea*, vol. xlvii, p. 408) as "a loud, hurried, high-pitched warble", is often to be heard in India in early autumn when the birds arrive from the north; I personally have not heard it in the spring before the birds depart for their breeding-grounds.

The Arctic (or Eversmann's) Warbler (*Ph. borealis*), which I have only seen once in the field (on Fair Isle, September 1954) struck me as being a deeper, more intense green on the mantle than any other species known to me. The long, pale superciliary stripe is a striking feature; the pale wing-bar (or bars) is also visible as soon as a fairly good view is obtained, especially if the bird is seen from behind. It could easily be confused with *Ph. t. nitidus*, but the bill is dark, and if this feature is carefully noted, together with the other points already mentioned, identification is sure. The bird seen on Fair Isle was in company with a Willow Warbler (*Ph. trochilus*). When both were together on a wire fence there was little if any visible difference in size. The Arctic is, on measurement, the largest of the genus, but it is doubtful if this is a useful field-character. It should be added that the bird referred to was identified by K. Williamson as a juvenile; the adult, he tells me, is not such an intense green. The mantle can look almost the colour of that of a Wood Warbler (*Ph. sibilatrix*). But the under-parts lack the contrasting yellow and white of the under-parts of that species.

Reference may also be made to *Ph. magnirostris*, the Large-billed Leaf Warbler, a species which breeds plentifully in the hill-ranges to the north and north-east of India. It migrates to the extreme south of India and to Ceylon. Tiechurst says: "With *borealis* (the Arctic Warbler), the largest of the *Phylloscopi*. On size and colouration probably could not be differentiated in the field from *borealis* and *trochiloides*, but the best guide is the very distinct

call-note well expressed by 'dir-tee', the second syllable half an octave higher than the first."

To this, I would add a few qualifications. Here again the bill is an important feature; not only is it in fact a rather broad and long bill for a *Phylloscopus*, as its scientific name indicates, but it also looks much darker than the bill of *Ph. trochiloides*, though it is very similar to the bill of *Ph. borealis*. The wing-bar (in the field I have never detected a second wing-bar) appears to be a somewhat variable quality. It is typically an arboreal bird, feeding and singing rather high up in pine or other ever-green trees, so that exact field-observation is difficult. From notes made in the field I should say that the upper plumage appears olive-brown with a tinge of green, the under-parts uniform dirty-white, with a tinge of yellow; there is a long pale supercilium. As already noted, *borealis* is normally a greener bird than *maguirostris*. In the case of the only bird I have been able to watch close to the ground for a couple of minutes (it was a passing migrant), I observed that the plumage, especially the wings, appeared to be brown-grey, lacking the olive tinge which is usual in *trochiloides*: the under-parts were dirty-white, lacking the yellow tinge of *trochiloides*: it showed a long pale yellow supercilium, perhaps longer than *trochiloides*, and had a much darker bill, as just noted. Occasionally, *maguirostris* shows a little white in the inner web of the outer tail-feathers and this I once noticed (without knowing at the time that it could be so) in a bird breeding in Kashmir. This feature is much more obvious in some of the small *Phylloscopi*.

Another common Indian species, the Kashmir Warbler (*Ph. occipitalis*), similar in size and general character, has a strikingly orange mandible; this bird is readily distinguished by a pale yellowish occipital streak along the crown between broad and dusky coronal bands. As it is a bird of comparatively restricted range, not known to breed west or north of Bokhara, it is unlikely to occur in western Europe.

The Crowned Warbler (*Ph. coronatus*) a much more easterly species which breeds in north China and adjacent countries, has once occurred on Heligoland. It is similar in general plumage to *Ph. occipitalis*, or it might be called the Far Eastern representative of the Wood Warbler; the mantle is green, the under-parts white; but instead of the yellow throat of the Wood Warbler, it has yellow under tail-coverts; and it has a single pale wing-bar and a pale occipital stripe. In the field it appears to be less volatile than most *Phylloscopi*.

B—SMALLER LEAF-WARBLES WITH WING-BARS.

No less than eleven of Tiechurst's thirty species belong to this category. The majority are birds of the mountain massif which ranges from Afghanistan across northern India to west China; so it seems unlikely that they will straggle right across to western Europe. But then, who would have dreamed that Pallas's Leaf Warbler (*Ph. proregulus*), the smallest of the genus, would twice

reach the British Isles, and three times Heligoland, since the nearest known breeding-ground is in the Altai mountains nearly four thousand miles due east (or even slightly south of east) from Britain? It is remarkable enough that small numbers of Yellow-browed Warblers (*Ph. i. inornatus*) apparently travel some 1500 miles westwards almost every year to Britain; for its only known European breeding territory is by the lower Peehara River. For each of these tiny birds that has been recorded, presumably a dozen or more must have passed unnoticed.

Geographically, perhaps the most likely bird in this group to turn up which has not already done so, is Hume's Yellow-browed Warbler (*Ph. i. humei*) which breeds no further away than *Ph. proregulus*. This race totally lacks the yellow tinge to the superciliary stripe that has given the species its English name. Hume's is a widely spread bird very common all over northern India in winter. Apart from its much whiter appearance, it has a distinct call-note; distinct that is from the note of typical *inornatus*. Unhappily, however, its call-note, normally a sharp fairly long double "tiss-yip", is almost indistinguishable from the note of *Ph. trochiloides*. Some wateher of the northern isles, who has heard the Greenish Warbler, and then one day finds a different *Phylloscopus*, small, short-tailed, grey-brown and white, with conspicuous wing-bars, uttering the same double note, might fairly conclude that he has Hume's Yellow-browed Warbler under observation. The colour of the bill is again important in this species. It is the only *Phylloscopus* with a dark tip to the lower mandible. This is a useful character if the bird is handled after trapping. It applies equally to both sub-species. The white tips to the secondaries of both sub-species are also conspicuous.

Several of the present group of *Phylloscopus* are fairly easy to identify if seen well. Thus the Orange-barred Warbler (*Ph. pulcher*) has striking orange wing-bars, a yellow rump and white in the outer tail-feathers. Baker's Warbler (*Ph. reguloides*) however, is another bright coloured little bird with yellowish wing-bars, but it has no yellow on the rump, or white in the tail, and its mantle is bright olive-green, not brownish as in *Ph. pulcher*. *Ph. reguloides*, in the breeding season, calls "kee-kew-i" constantly. *Ph. pulcher*'s call-note is a single sharp "twiek". The White-tailed Warbler (*Ph. davisoni*) is very near to *reguloides*, but has conspicuous white in the tail. The Grey-faced Warbler (*Ph. maculipennis*) is grey on most of the head, face and neck, contrasting with olive-green mantle. This is another species which has yellow wing-bars and white in the tail. Rickett's Warbler (*Ph. ricketti*) has a face-pattern like a small tiger, with black lateral coronal streaks contrasting with a pale yellowish central coronal band and bright yellow superciliary. The Pale-legged Warbler (*Ph. tenellipes*) perhaps comes nearest to *Ph. i. humei*, but it has a golden brown rump and the under-parts are pure white. These

last two species I saw on migration in south-west China in April 1943. They were easy to identify. There are three other small species with wing-bars whose ranges are restricted that they need not be mentioned.

It will be seen that *Ph. pulcher*, *Ph. maculipennis* and *Ph. tenellipes* have a yellow rump, which is also one of the striking features of *Ph. proregulus*. That feature alone, therefore, is by no means diagnostic of Pallas's Willow Warbler. The absence of white in the tail and of yellow in the wing-bars, however, together with the yellow rump, are diagnostic of Pallas's which also appears to be the only species that regularly flutters, like a Goldcrest (*Regulus regulus*), to take insects from the air just below the foliage of trees or bushes. This important field-character was observed in the Northumberland bird in 1951 (*antea*, vol. xlv, pp. 258-259).

SUMMARY

It is pointed out that a number of *Phylloscopi* never hitherto recorded from western Europe might occur with no less improbability than some which have occurred. In this paper only those which have a pale wing-bar or bars are dealt with. The Greenish Warbler (*Ph. trochiloides*) is shown to be a species with a wide range of plumage, and it sometimes shows no wing-bars at all in the field. Four species or forms of the group of larger leaf-warblers not hitherto recorded from Britain are referred to. The importance of noting the colour and shape of the bills of certain species is stressed. The group of small leaf-warblers with wing-bars is shown to be more extensive, but in most cases the field-characters are more distinct, and in several the distribution is restricted. Call-notes are often, but not invariably, important additional clues to identification.

At trapping-stations the wing-formula can often be of decisive importance. But in this article emphasis has been laid on features that can be of use in the field when the bird cannot be handled.

APPENDIX—ENGLISH NAMES OF LEAF-WARBLED

There has not been any uniformity in applying English names to the birds of this genus. Collectively they are known as the leaf-warblers or willow-warblers. Ticehurst, in his monograph (1938), uses the scientific name only for individual forms. Probably the book in the English language, apart from Ticehurst's monograph, which describes the largest number of forms, is Stuart Baker's *Fauna of British India* (1922, etc.) where he deals with thirty-five forms and provides every one with an English name. Moreover, he calls every single one a willow-warbler. Even *Phylloscopus collybita tristis*, widely known, not only among British ornithologists, as the Siberian Chiffchaff, he calls the "Brown Willow-Warbler". Smythies, in the more recently published *Birds of Burma* (1940), also calls each form a willow-warbler, though he has only seventeen forms to describe, not including any race of *Ph. collybita*.

Witherby, on the other hand, in *The Handbook*, dealing with twelve forms, only applies the name "Willow-Warbler" to *Ph. trochilus*. So we have two extremes to choose from, or to compromise with. I think the case against including the English word "Willow" in front of Warbler in most cases is powerful. There is no point in giving birds longer names than is necessary to distinguish them satisfactorily. If the names used in the Asian books were, in fact, well established names in the areas in which the various species and races are common, then I for one should invite English ornithologists to adopt them. But it is not so. Nearly all are purely book names; and I notice that Salim Ali, who refers to six forms in his *Indian Hill Birds* (1949), though he calls them all willow-warblers, with the exception of the Chiffchaff, uses in some cases different English names from those used by Stuart Baker. In other words, many have no established English name in the parts of the world where they are regularly found. So it seems reasonable to use the shortest name wherever this is adequate. In certain cases, the only name I can find seems so cumbersome and unsatisfactory that I have been tempted to employ a new name. I have yielded to the temptation in one or two instances.

I am venturing two amendments with regard to the names now to be found in *The Handbook*. In the case of *Ph. proregulus*, I think to call it simply Pallas's Warbler is ambiguous. For there is also Pallas's Grasshopper Warbler (*Locustella certhiola*). So here it seems to me important to signify that Pallas's Leaf Warbler is the bird under consideration. On the other hand, I see no reason for calling *Ph. schwarzi*, Radde's Bush Warbler. No other warbler, as far as I know, has been named after Radde. I believe the name "Bush Warbler" was applied to it when it was put into a separate genus from *Phylloscopus*. If it is called "Bush Warbler" to emphasize the fact that it normally keeps near the ground, then several other members of the genus, such as the Dusky Warbler (*P. fuscatus*) ought also to be called bush-warblers. It is simpler to drop the needless word, and to call it Radde's Warbler.

It might be urged that the same principles should be applied to the *Acrocephali*. In fact, we normally call some of them reed-warblers, but not others. The Great Reed Warbler (*A. arundinaceus*) needs the middle name, because, while it is much larger than any other European warbler, in other parts of the world there occur other species, belonging to different genera, that are as large or larger. In the case of Blyth's Reed Warbler, this name seems to have been applied to *A. dumetorum* so generally and for so long that it seems unwise to try to change it. To my mind the same argument does not apply equally, and does not outweigh other factors already noted, in the case of Radde's Warbler.

THE PASSAGE OF BLACK TERNS THROUGH BRITAIN IN AUTUMN 1954

By ALEC BUTTERFIELD and KENNETH WILLIAMSON

(Fair Isle Bird Observatory)

THE unusual passage of Black Terns (*Chlidonias niger*) through the British Isles during the spring of 1954 has been discussed by Dickens (1955). This was followed by an equally abnormal passage during the autumn. There appears to be no connection between these two events other than that vagaries of the weather happened to throw up conditions tending to bring birds of this species to the British Isles on both migrations.

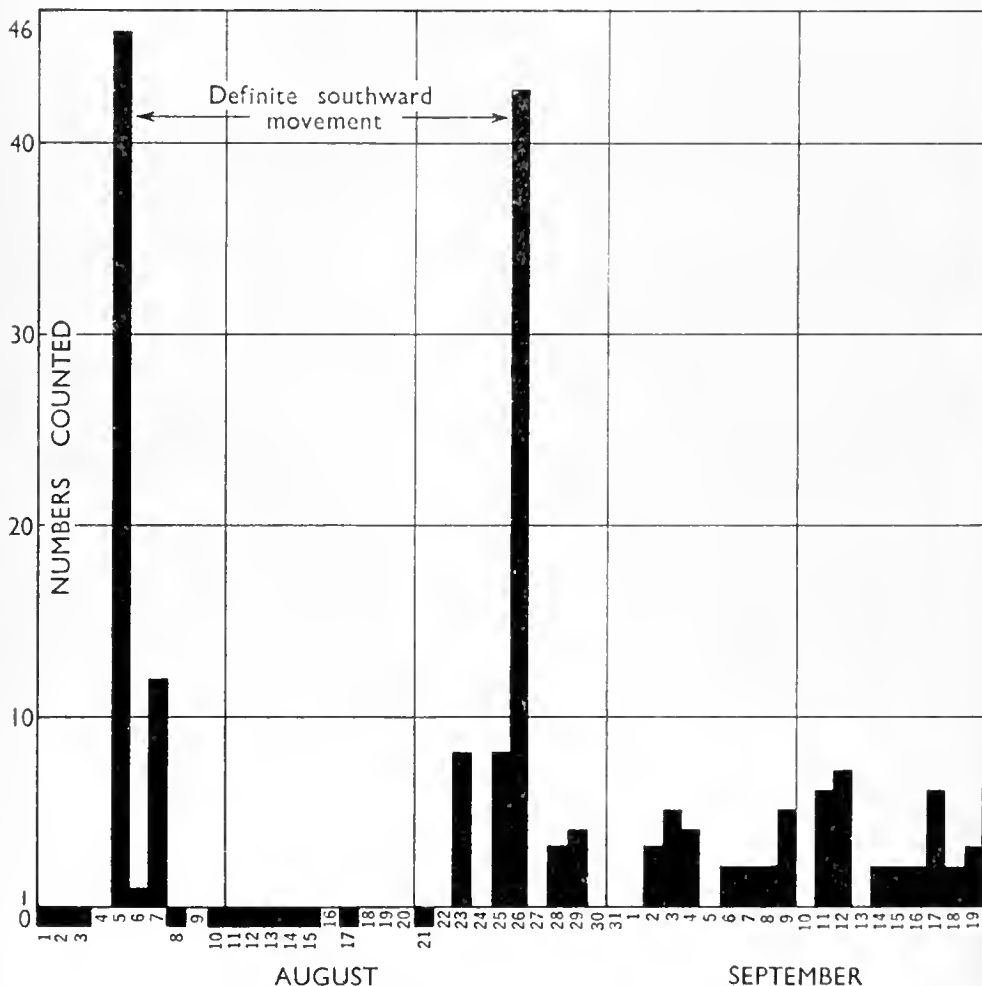


FIG. 1—BLACK TERNS (*Chlidonias niger*) AT KING GEORGE V RESERVOIR, ESSEX, IN AUTUMN 1954

Blank dates (e.g. 4th, 9th August) indicate reservoir not visited. Single birds were also recorded on every visit between 26th September and 3rd October.

Apart from frequent occurrences in Cheshire and south Lancashire, with smaller numbers in Yorkshire, the species is most commonly observed in autumn on the eastern seaboard from Lincolnshire southwards, and inland in a region to the south and east of boundaries from Boston to Warwick and thence to Bourne-

mouth. In 1954 observers in Cheshire, Norfolk and Lancashire reported smaller numbers than normal, while there are reports of unprecedented numbers from Somerset, and birds were seen as far north as the Isle of May in the Firth of Forth. There are several reports of small flocks remaining about the same stretch of water for periods of three or four days, so that it is not easy to determine the commencement and peak of successive invasions. Birds were reported on later dates than usual, October records being common, while there are several for November.

Our thanks are due to the many observers who have contributed records (and whose names are given below), and especially to the County and other Records who have supplied us with useful summaries. Space will not permit us to quote each individual record, but we should like to stress the value of those we have omitted, since they were of great help in assessing the position over the country as a whole. Special thanks are due to Mr. J. L. F. Parslow who prepared a valuable analysis of the passage at the King George V Reservoir, Essex, summarized in fig. 1. Thanks are also due to the Controller of H.M. Stationery Office for permission to reproduce figures based on the charts in the *Daily Weather Report*.

THE NUMBERS OF BLACK TERNS

Six successive but overlapping movements can be distinguished from the records. The first began on 4th August when 2 birds were at Northampton Sewage Farm and one at Seroby Sands, Norfolk: next day there were 56 at Northampton with c. 40 and 35+ at the neighbouring Ravensthorpe and Hollowell Reservoirs respectively. Fluctuating numbers, suggesting that passage was taking place, were recorded from Bellfields and Cannoek Reservoirs in Staffordshire, and from Upper Bittell Reservoir, Worester. At the last, c. 90 birds were seen at one time. About 70 were seen at Burghfield Gravel Pits, 3 miles from Reading, Berkshire, but the biggest number, c. 170, was reported from Chew Valley Reservoir in Somerset (*antea*, p. 178). At least 650 birds in all were seen during the day, but the number present may well have been higher. By the 6th these birds had virtually disappeared, and only 26 were recorded in the whole country.

After this brief hiatus, however, 87 birds were reported from Abberton Reservoir, Essex, on 7th August, and 50+ remained next day. This represents the only large number seen this week-end, but individuals were reported from as far north as Teesmouth, suggesting an extension of the movement. Further evidence of this passage comes from reports of 20 birds at Northampton and 12 off the Suffolk coast.

The next substantial influx is of 80+ at Abberton Reservoir on 19th August, but the only other record for that day is of 5 birds at Gibraltar Point Bird Observatory in Lincolnshire. Numbers remained small until the 25th, when 10 were seen at Hornsea Mere, Yorkshire. A single bird had been seen the day before at Culler-

nose Point, near Craster, Northumberland. These northern occurrences were followed by records of 43 at King George V Reservoir, Essex, on 26th August, and 40 at Chew Valley Reservoir, Somerset, on the 27th. As these are mid-week days the passage may have been more widespread, for on Sunday the 29th birds were dispersed in small parties over the whole country from Aberlady Bay, East Lothian, southwards.

Records are scanty and mainly from the English east coast Bird Observatories until 9th September when more than 200 birds appeared over Terrington Marshes in Cambridgeshire, with a further 20 at Kings Lynn, Norfolk, and smaller numbers at various points from Teesmouth, Yorkshire, to Slapton Ley, Devon. At the same time Black Terns appeared in Ireland. In Co. Derry there were 2 over Lough Beg, and in Co. Mayo 16 over Lough Carra "form the largest number ever reported together in Ireland" (R. F. Ruttledge, *in litt.*). The widespread records of Sunday, 12th September, probably derived from this passage.

The most northerly records for the autumn were from the Isle of May Bird Observatory where 10 were seen on 18th September, though the species may have been present on the 14th and 15th: the ominous word "gale" is sufficient reason for the lack of certainty. There were a few at King George V Reservoir on the 17th and 20 were seen at Chew Valley Reservoir on the 19th.

Small numbers were reported from many scattered places on Sunday, 26th September, but it is difficult to be certain whether these had just arrived or just been noticed that day. Thereafter numbers dwindled, small groups being recorded until 6th October after which only isolated birds were seen. Odd individuals remained into the second half of October, however, and even into November when Black Terns have very seldom been recorded in Britain.

THE DURATION OF THE PASSAGE

This extension of the passage towards the end of the year constitutes its second extraordinary feature. Normally the numbers of this species seen in Britain dwindle rapidly during the first half of October and few are recorded thereafter. *The Handbook of British Birds* carries less than 30 "bird-day" records after 14th October, yet there were at least 35 such records this year. The position may, perhaps, be more easily appreciated from the table below:

Week commencing	Bird-days recorded
OCTOBER	
1st	93
8th	8
15th	12
22nd	13
29th	3
NOVEMBER	
5th	3
12th	1
19th	3

The rapid decline in numbers after the first week is very noticeable and conforms to the normal pattern, but the subsequent occurrences appear to have no recorded parallel. All records of birds seen after 14th October are given as an appendix to this paper but mention must be made of three instances of birds apparently remaining in one locality for prolonged periods.

N. Harwood observed a bird of this species each day from 15th to 30th October at Freckleton Sewage Farm, Lancashire. Although his observations continued the bird was not seen again. *The Sussex Bird Report* gives details of single birds being seen near Litlington on 13th and 21st November, and over Cuckmere Old Channel on the 20th; it is suggested that only one bird was involved there. It also seems fairly certain that the records of a single bird seen at Hornsea Mere, Yorkshire, on 7th and 21st November by G. R. Bennett and M. Wear refer to the same bird. This bird had disappeared by the 27th.

There seems little doubt that the comparatively mild autumn with a large measure of freedom from severe frost would allow the supply of insect food, on which this species depends so largely, to continue much later than normal and so make possible the survival of the birds. Since this matter of the delayed departure of summer visitors etc. is already engaging the attention of Mr. J. A. G. Barnes (*antea*, p. 240) it will not be pursued further here.

The above summary is based on observations supplied by the following observers:

M. C. Adams, R. G. Adams, L. P. Alder, H. G. Alexander, G. A. Arnold, M. A. Arnold, J. S. Ash, J. A. G. Barnes, R. Beck, J. E. Beckerlegge, G. Bennett, D. F. Billett, A. R. M. Blake, A. W. Boyd, P. W. P. Browne, A. J. Bull, W. D. Campbell, M. J. Carter, H. A. R. Cawkell, R. Chislett, C. Clarke, E. Cohen, F. Cooke, R. K. Cornwallis, Mrs. J. B. Cowdy, A. H. Daukes, C. E. Douglas, G. M. S. Easy, P. J. Fenning, Miss K. G. Foott, T. W. Ford, J. L. Fox, P. L. Garrett, P. F. Goodfellow, H. J. Goodhart, P. Gordon, F. Grey, F. C. Gribble, Miss G. A. Griffiths, P. L. Hagg, F. D. Hamilton, R. Harkness, A. Harrison, R. A. J. Harrison, N. Harwood, J. J. Hatch, H. H. S. Hayward, G. A. Hebditch, J. Hedley Bell, C. J. Henty, G. A. K. Hervey, R. A. O. Hickling, I. Higgins, M. D. Higgins, A. G. Hill, D. Holland, R. Hudson, C. M. James, D. E. Jebbett, M. Jones, W. W. Jones, F. E. Kennington, B. King, K. A. Landon, Miss P. Lapper, H. Lapworth, H. K. Larsen, P. F. le Brocq, J. C. H. Leeson, F. Lexster, C. S. Louch, H. J. Mackett, D. McCullogh, S. Martin, M. F. M. Meiklejohn, R. F. Moore, D. F. Musson, C. Nelson, Mrs. S. Orchardson, C. L. Ottaway, J. L. F. Parslow, W. Paulussen, N. R. Phillips, J. D. Pickup, P. R. Powell, G. A. Pyman, G. H. Rees, B. W. Renyard, R. A. Richardson, E. L. Roberts, R. F. Rutledge, B. A. Salmon, L. S. Samuels, J. D. Scott, R. E. Scott, M. J. Seago, D. R. Seaward, H. Shorrocks, M. S. J. Snoxell, J. H. Sparks, P. J. Stead, A. R. Sumerfield, J. E. G. Sutton, C. M. Swaine, C. F. Tebbutt, G. W. Temperley, R. Thearle, W. A. Thornley, S/Ldr. D. Turner Ettlinger, C. M. Veysey, A. Walker, I. A. Walker, D. I. M. Wallace, T. P. Walsh, E. Ward, A. A. Wright, Bardsey, Dungeness, Gibraltar Point, Isle of May and Spurn Bird Observatories, Wildfowl Trust.

In addition the following kindly responded to a request for addi-

tional details of observations which they had collected as recorders for their respective areas:

J. S. Carter, R. Chislett, F. K. Cobb, E. Cohen, R. K. Cornwallis, E. H. Gillham, R. A. O. Hickling, J. Lord, I. C. T. Nisbet, A. G. Parsons, K. B. Rooke, R. F. Ruttledge, C. M. Swaine.

THE METEOROLOGICAL ENVIRONMENT

The general weather conditions corresponding with the main influxes suggest that the situations in which overland movements through Britain take place in autumn are very different from the conditions which influence the large-scale spring invasions. At that season, in 1954, the picture was of widespread anticyclonic weather with a S.E. airstream between Biscay and the Irish Sea drifting the Black Terns to south-west and west England, whence they re-orientated across country towards the narrow gap separating East Anglia from their presumed breeding-grounds on the Continent (Dickens, 1955). The autumn invasions, with one exception, were associated with cyclonic weather. At this season, of course, the distribution of the major part of the Black Tern population must be entirely different, and it is to be expected that the biggest concentrations in August and September will be in the eastern North Sea and Channel areas.

When the meteorological environment of these autumn incursions is closely examined it is apparent that the "common denominator" is frontal weather with winds in this area between N.E. and S.E. We have observed at Fair Isle that frontal disturbance has a marked effect on the behaviour of terns (*Sterna* sp.) and there is some evidence that other sea-birds are also affected (see *F.I.B.O. Bull.*, no. 4, p. 26 and vol. 2, pp. 227-229 for examples). The warm sector of a depression, with warm, moist air rising above colder and denser air at its leading edge (the "warm front") and cold air undercutting and lifting the tropical air at its rear (the "cold front"), is generally a region of heavy cloud-cover and precipitation, and sometimes of fog or at any rate of poor visibility. If sea-birds dislike to encounter such systems, it is even more understandable that Black Terns, Swifts (*Apus apus*) and the Hirundines, with their aerial feeding-habits, may be especially affected, since the precipitation is bound to engender a temporary loss or diminution of food-supply. It is further understandable that such birds should use their extreme mobility to avoid contact with frontal systems even to the extent of making a wide deviation from their normal route. The only way of outdistancing an approaching front, and of reaching clear weather beyond it, is to travel down-wind round the cold air segment of the depression.

The effect of this type of weather on the Black Tern migration is most clearly demonstrated in the double invasion of 9th September, when a considerable body of terns appeared in two widely separated regions. Cambridgeshire and Norfolk recorded many birds, and in north-west Ireland—where this species is a great rarity—about a score appeared. During the night the warm front of a new and

vigorous depression centred off south-west Ireland extended across St. George's Channel, southern England and the English Channel. So far as East Anglia is concerned, winds were southerly there and on the French and Belgian coasts, backing S.E. farther up the east coast, where scattered occurrences were noted. This front moved northwards fairly rapidly, especially in the Irish Sea, where it had a S.E. backing airstream before it. The centre of the depression had travelled to Co. Mayo by 0600 hours on the 9th and to the Inner Hebrides by mid-day, when the occluded front cleared East Anglia. It is likely that two independent groups of migrant terns, one in the north English Channel and the other somewhere off south-west England, attempted to avoid this rain-belt by moving down-wind through the Straits of Dover and the Irish Sea respectively (fig. 2).

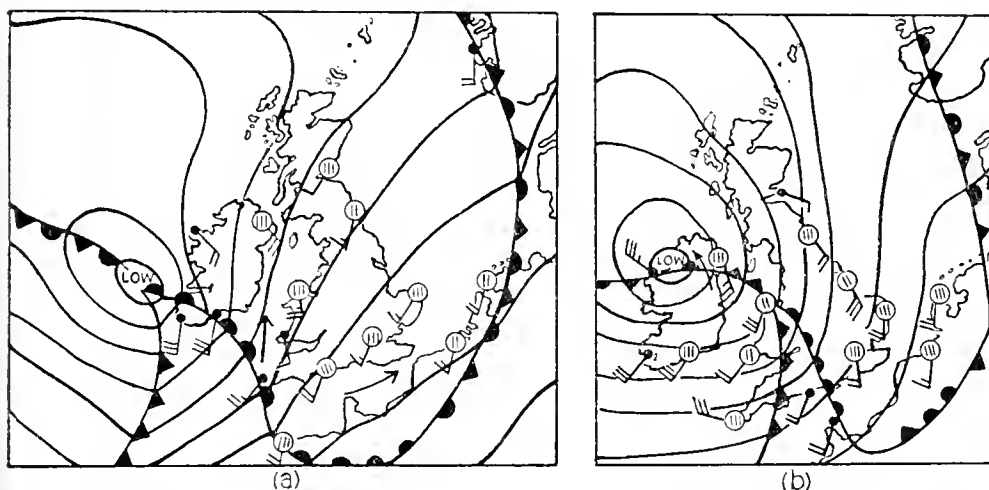


FIG. 2—WEATHER AFFECTING MOVEMENTS OF BLACK TERNS (*Chlidonias niger*) ON 9TH SEPTEMBER 1954
Showing advance of fronts into Irish Sea and English Channel: (a) midnight (b) 0600 hours.

The effect of frontal weather can be traced in other movements, though the connection is less obvious in some than in the case just described, and in all cases the affected area is the northern reach of the English Channel and the southern North Sea. At the time of the biggest movement, 4th-5th August, there was a high pressure centre in the North Sea, and the easterly wind below it was accentuated by the presence of a warm front which stretched from East Anglia to Belgium, giving heavy cloud-cover (see fig. 3). Although it was not very active, it is possible that the front exerted some influence on Black Terns moving in the coastal region between the North and West Frisian Islands and that they attempted to avoid it by moving W.S.W. or west instead of continuing towards the Straits of Dover. Despite the day's hiatus on 6th August, it seems likely that the concentration in Essex on the 7th-8th was due to a return south-eastwards of the same birds in improving weather, rather than to a new invasion.

There were more pronounced cases of easterly drift ahead of

frontal weather on 19th and 25th August, when active depressions were centred over the southern part of the North Sea, giving N.E-

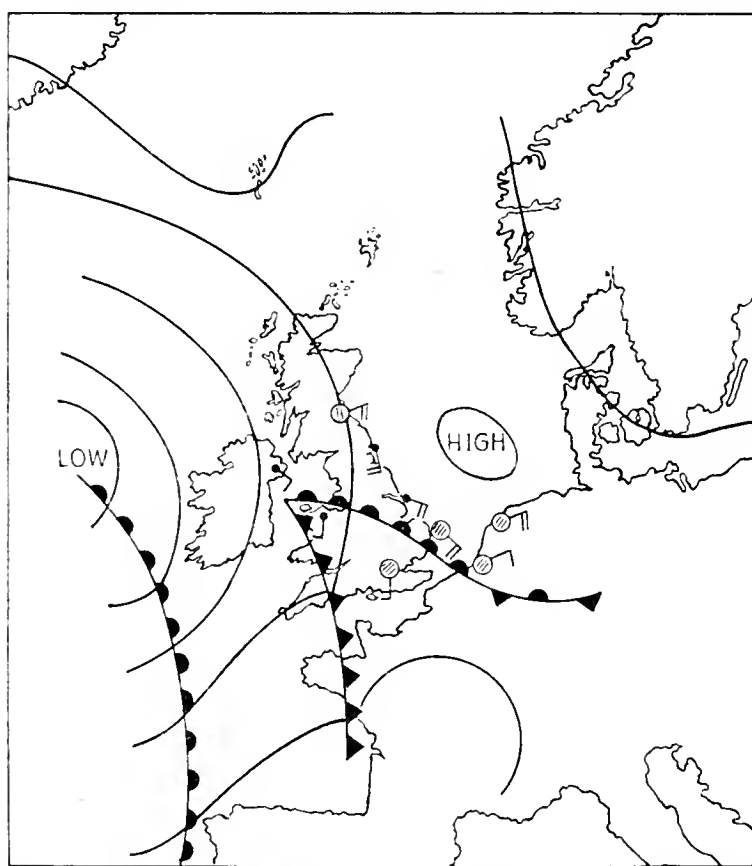


FIG. 3—WEATHER AFFECTING MOVEMENTS OF BLACK TERNS (*Chlidonias niger*) ON 5TH AUGUST 1954

Showing situation of warm front and wind direction in southern North Sea: 0600 hours.

N.W. winds on the east coast of England (figs. 4 and 5). It seems likely that the observations of the 26th-29th were of the residue of this latter invasion moving on in better weather, and the same explanation may account for the scattered records of 12th September, the Sunday following the Irish occurrences. The week-end observations of 25th-26th September coincided with a period of frontal activity in the Channel area, especially on the 24th when the warm sector of a depression entered the North Sea, and early on the 26th when an occlusion brought considerable rain in the Straits of Dover. The mid-September observations came at the week-end 18th-19th (the peak day at King George V Reservoir was the 17th) following a westerly gale which was due to a vigorous secondary depression forming west of Ireland on the 15th and moving rapidly N.E. with fronts in the North Sea.

SUMMARY

1. The main influxes of Black Terns in Britain in autumn 1954 are recorded and discussed in relation to the prevailing weather.

2. The movements show an association with frontal disturbances, with generally easterly winds and precipitation or heavy cloud-cover over south-east England and the adjacent Continental coasts, apparently causing a westwards deflection of Black Terns moving

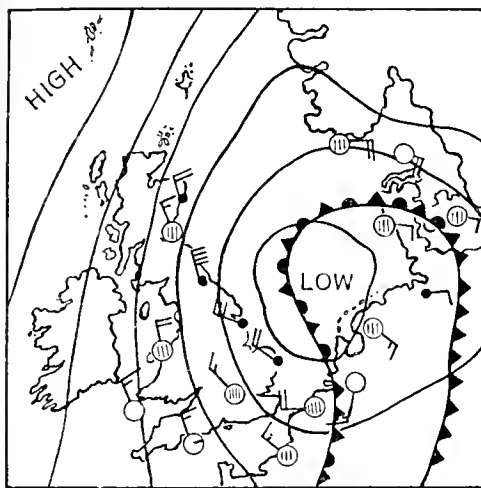


Fig. 4

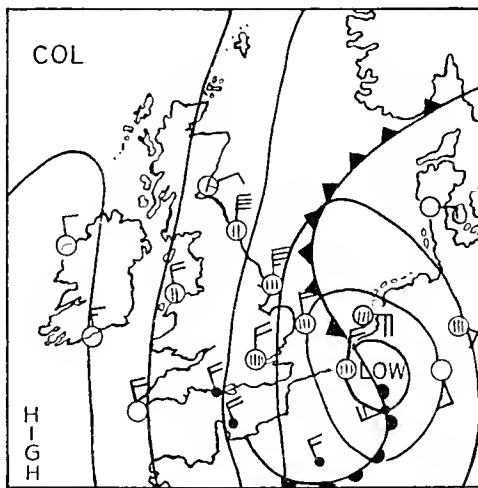


Fig. 5

FIGS. 4 & 5—WEATHER AFFECTING MOVEMENTS OF BLACK TERNS (*Chlidonias niger*) ON 19TH AND 25TH AUGUST 1954

Fig. 4 showing advance of occluded front across North Sea: 0600 hours, 19th.
Fig. 5 showing advance of cold front across North Sea: midnight, 24th/25th.

through the eastern and southern North Sea and northern part of the English Channel. A double invasion of 9th September in Ireland and East Anglia almost certainly comprised two movements of independent origin ahead of an active warm front which advanced rapidly through the Irish Sea and into the southern North Sea respectively.

REFERENCE

DICKENS, R. F. (1955): "The passage of Black Terns through Britain in spring 1954." *Brit. Birds*, xlviii: 148-169.

APPENDIX—BLACK TERNS RECORDED IN 1954 AFTER 14TH OCTOBER

- 15th October: One, Freckleton Sewage Farm, Lancashire (seen daily until 30th Oct.); a juvenile over Manchester Ship Canal.
- 16th October: One near Cannock, Staffordshire.
- 17th October: One each at Porthminster Beach, Cornwall; Staines, Middlesex; and the Kent side of the Thames.
- 23rd October: One at Lynn Point, Norfolk.
- 24th October: One each at Chew Valley Reservoir, Somerset; and Lynn Point, Norfolk.
- 26th October: One at Frampton-on-Severn, Gloucester.
- 1st November: One at Bradwell, Essex.
- 7th November: A juvenile at Marazion Marsh, Cornwall; and another bird at Hornsea Mere, Yorkshire.
- 9th November: One at Marazion Marsh, Cornwall.
- 13th November: One at Litlington, Sussex.
- 20th November: One at Cuckmere Old Cut, Sussex.
- 21st November: One each at Litlington, Sussex; and Hornsea Mere, Yorkshire.

NOTES ON THE POST-JUVENILE MOULT AND FIRST-WINTER PLUMAGE IN THE PHEASANT

By KAJ WESTERSKOV

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THIS note has been prompted by a few inaccuracies which have persisted in *The Handbook of British Birds* on the post-juvenile moult and first-winter plumage of the Pheasant (*Phasianus colchicus*).

Since its first edition in 1941, another six impressions of *The Handbook* have appeared, the last one in 1952. In vol. V (p. 238) it is said about the young Pheasant that: (1) the winter plumage is like the adult's; (2) the juvenile plumage is completely moulted, commencing when the bird is about half-grown; (3) the two outer primaries are not full-grown when the inner primaries and body commence to moult; (4) the two distal primaries are like adult primaries except for more pointed tips; (5) they are not shed during the post-juvenile moult; (6) and the moult is often not quite complete in November and even December (British Isles). Several of these statements are not correct.

The information below is not all new, but as the last edition of *The Handbook* has not incorporated findings dating back to 1942 (Petrides) on the complete moult of the primaries in Pheasants, it was felt that the errors should be corrected.

During a study of the ecology and other aspects of the Pheasant in New Zealand, a detailed investigation was made of the growth, moults and development of juveniles. The results of this work will be published elsewhere; it will suffice to consider here the questions raised by the above statements in *The Handbook*. A total of 505 juvenile Pheasants were examined in detail; all birds were wing-tagged, and, when seven weeks of age, were liberated on an island (Mokoia Island, in Lake Rotorua, North Island) where they were later trapped for examination purposes. The total number of birds from which the studied specimens were selected was about 2,500. The work was carried out during the 1953/54 breeding season. The birds examined were pure-bred (or near pure-bred) *Phasianus colchicus colchicus*, *P. c. torquatus*, and *P. c. mongolicus*. The 505 birds examined were divided evenly in weekly groups over the period from hatching till 24 weeks of age when the young Pheasant is fully developed.

WINTER PLUMAGE

The statement that the first-winter plumage in the Pheasant is like the one in adults is correct. As far as it was possible to ascertain during handling and examination of several thousand

Pheasants, there are no plumage differences between immatures (birds-of-the-year) and adults (one year old or older).

These differences are present: the adult coeks have a longer spur than immature birds, as shown in detail by Linduska (1943); immature birds of both sexes retain the bursa of Fabricius till the end of December and frequently into January-February (northern hemisphere) whereas adult birds have no bursa (Kirkpatrick, 1944); a grey sheath around the base of the central tail-feathers is present in most immature birds during their first autumn, but only in few adult coeks; the oviduct in adult hens is convoluted.

TIME FOR MOULT OF JUVENILE PLUMAGE

The juvenile plumage is completely moulted, but it is not correct that the moult commences when the bird is about half-grown. A growth curve based on weights of 505 young cock Pheasants of known age showed that they reach their maximum—1400 grams—in 24 weeks. They are half-grown—weighing approximately 700 grams—when about 11 weeks old. The first (innermost primaries) were moulted by the 4-5 weeks old birds, and the five weeks old Pheasant must be considered the typical juvenile having attained its drab grey juvenile plumage.

At this stage the young Pheasant still has natal down left on crown and nape while on the other hand the two innermost primaries in each wing have been moulted and replaced by growing primaries of the first-winter plumage; the first few red breast-feathers of the first-winter plumage appear in the seven-weeks-old cock birds.

The post-juvenile moult in Pheasants therefore begins at 4-5 weeks of age, when the cocks average 150 grams, or about one-ninth of their ultimate size.

In silhouette the bird at this age is only one-quarter of the adult bird. In height, standing, it measures unmistakably less than half the fully developed immature bird.

MOULT OF PRIMARIES

At the time when the first edition of *The Handbook* was issued in 1941 it was the general contention that the two distal primaries (nos. 9 and 10) of the juvenile plumage were retained in all *Galliformes*. This belief dates back at least as far as 1788 when a French author, Magne de Marolles, in his book *La Chasse au Fusil* stated that the two distal primaries in the wing of the Partridge (*Perdix perdix*) were retained during the post-juvenile moult (Bureau, 1911, p. 3).

This moult pattern was found in many of the *Galliformes* studied and it was thus generalized that all of the gallinaceous birds moulted their primaries in this way.

Heinroth, who studied the growth, moults and development of birds as much as any contemporaries called the moult of the primaries in the *Galli* "eine heikle Sache" (1931, p. 182) and further

stated that in all the *Galliformes* the moult pattern is basically the same.

All textbooks and papers followed this concept until Petrides (1942, p. 323) first showed that the juvenile Pheasant—contrary to general belief and to the other gallinaceous birds studied by him—moulted and replaced all ten primaries during the post-juvenile moult. Independently of Petrides, Salomonsen (1946) arrived at the same result. Recently several studies have been carried out to obtain details about this moult for the development of accurate ageing techniques.

My own studies corroborate the findings of these other workers, including the two just mentioned, Buss (1946), and Trautman and Woehler (internal cyclostyled reports).

The two distal juvenile primaries—so much discussed—are shed in the Pheasant when the bird is 13-15 weeks old, and the outermost one of the first-winter plumage is fully developed when the bird is 23-24 weeks old.

It is therefore not correct that the two distal primaries in immature Pheasants have more pointed tips than adult birds as is the case in many other game birds, e.g. the Partridge. The feather tips are alike and can therefore not be used for differentiating between young and old Pheasants.

The report that the two outer primaries are not full-grown at the time the inner primaries and the body commence to moult, is an under-statement. The fact is that in several of the examined four-weeks-old birds the outermost juvenile primary had not emerged yet from the follicle at the time when the innermost primary was shed to be replaced by the primary of the first winter plumage.

The first seven primaries are present in the newly hatched chick; the eighth primary appears during the first week, the ninth during the second week, and the tenth during the third week, or as late as 28-30 days after hatching.

So the distal juvenile primary is only very short—sometimes not even emerged—when the innermost primaries are moulted at 4-5 weeks when also the moult of the body feathers begins.

COMPLETION OF MOULT

The young Pheasant must be considered fully developed and mature when 24 weeks old. At this age the cocks—which were studied in most detail—had reached their full weight; the moult of the primaries was completed and the new primaries had attained their full length; the body was covered in the shining plumage of the first winter, being also the first nuptial plumage; finally, Pheasants are sexually mature at this age and will breed if exposed to suitable light conditions. This was shown by Bissonnette and Csech (1938, p. 181) who induced pheasants to lay fertile eggs while only 185 days old.

For practical purposes the 20 weeks old cock Pheasant has the

full appearance of an adult cock from which it only differs by having its tenth primary only three-quarter grown, by the shorter spurs, and by the blue sheaths still present at the base of the rectrices. Its plumage is fully as bright and colourful as in the adult cock.

When it is stated in *The Handbook* that the moult is often not quite complete in November or even December, it will mean that young cock Pheasants not yet fully moulted by c.g. 15th December—being less than 20 weeks old—must have hatched as late as around 1st August. Such late broods are due to repeat-nesting—the first nests having been destroyed, for example, during hay-mowing.

The Handbook states that the first eggs generally are laid early in April in England, but the majority not till a fortnight later; and fresh eggs have been found in October. If such late nests were successful it would mean that for example a nest in which laying began on 1st October, hatching would not take place till about 8th November (assuming an average clutch-size of 12 eggs, the egg-laying rate of 1.3 days per egg and the incubation period of 23 days). And Pheasants hatched on 8th November would not be fully plumaged (20 weeks of age) till late March the following year.

SUMMARY

Pheasants (*Phasianus*) attain their juvenile plumage when about five weeks old at which time the post-juvenile moult has begun; the proximal primaries are shed when the birds are 4-5 weeks old. All ten juvenile primaries are shed and replaced in contrast to most other *Galliformes*. The post-juvenile moult is complete and the immature Pheasant has reached its full weight when about 24 weeks old. Under field conditions young cocks of 20 weeks of age are indistinguishable from adult cocks. As all primaries are shed there is no difference in shape of tips in the two distal primaries in immature and adult birds.

REFERENCES

- BISSENETTE, T. H. and CSECH, ALBERT G. (1938): "Interrupted night lighting with pheasants." *Ecology*, 19: 181-187.
- BUREAU, LOUIS (1911): "L'âge des Perdrix. I.—La Perdrix grise". *Bull. Soc. sc. nat. Ouest*, 3e sér., 1: 1-124.
- BUSS, IRVEN O. (1946): "Wisconsin pheasant populations." Pub. 326, A-46. Wisconsin Cons. Dept., Madison. 184 pp.
- HEINROTH, O. (1931): "Die Mauser". *Proc. VIIIth Intern. Ornith. Congr.* Amsterdam: 173-185.
- KIRKPATRICK, C. M. (1944): "The bursa of Fabricius in ring-necked pheasants". *J. Wildl. Mgt.*, 8: 118-129.
- LINDUSKA, J. P. (1943): "A gross study of the bursa of Fabricius and cock spurs as age indicators in the ring-necked pheasant." *Auk*, 60: 426-437.
- PETRIDES, GEORGE A. (1942): "Age determination in American gallinaceous game birds". *Trans. Nth. Amer. Wildl. Conf.*, 7: 308-328.
- SALOMONSEN, FINN (1946): "Svingfjersfældningen hos Fasanvflinger (*Phasianus colchicus* L.)" *Dansk Ornith. Foren. Tidsskr.*, 40: 257-258.
- WITHERBY, H. F. et al. (1952): *The Handbook of British Birds*. Vol. 5. London. (7th ed.).

PHOTOGRAPHIC STUDIES OF SOME LESS FAMILIAR BIRDS

LXV. MARMORA'S WARBLER

Photographed by JOHN ARMITAGE

(Plates 41-44)

THOUGH the Dartford Warbler (*Sylvia undata*) is to be found on the islands of the western Mediterranean, it is there much outnumbered by its close relative, Marmora's Warbler (*S. sarda*), which has a very limited range from Tunis, Algeria, and the Balearic Islands to Corsica, Sardinia and Sicily. Like the Dartford, Marmora's is resident. In Corsica, where these photographs were taken, Mr. Armitage found it widely distributed on coastal slopes and islets, inland among the hills and also less commonly on the sides of the mountains up to a height of nearly 3,000 feet. Anywhere where the ground is covered with suitable scrub these birds may be found. Two typical areas are shown in plate 41.

At a distance Marmora's Warbler closely resembles the Dartford Warbler, except that it appears almost completely black. At close range it can be seen that the brownish-pink under-parts of the Dartford are replaced by slate-grey, so that the whole bird is of varying shades of dark grey except on the belly which is brownish-white. The head is almost black, as is well shown in plate 42. The female has a slightly more brownish tinge, particularly on the mantle and flanks.

The two species are very similar, not only in their general shape, but also in their flight and behaviour, though Marmora's is possibly the more skulking. In both the long tail is constantly cocked over the back (plate 42), and both have the same weak flight with its characteristic whirring action as they take wing for the shortest possible distances. Like the Dartford Warbler, Marmora's starts its harsh scolding on the slightest disturbance, characteristically appearing in full view, dropping out of sight, and then re-appearing on one of the topmost sprays of a bush.

The breeding season of Marmora's Warbler starts between the end of March and mid-April. The nest is built in any suitable scrub, clear of the ground and up to three or four feet above it. Most nests are fairly substantially constructed of dry grasses and vegetable down, occasionally with a little wool. A typical example is shown in plates 42 and 43. The lining consists of finer grasses, roots, hair, and sometimes a few feathers. As with some other *Sylvia* species, the male Marmora's builds "cock's nests", which are unlined and consequently very flimsy.

The song is basically like that of other *Sylvia* species, but is sweeter and shorter. It is uttered from any elevated perch, and often the bird will take to the air with a dancing flight like that of the Whitethroat (*S. communis*), suddenly ending its song by plunging into cover.

I.J.F.-L.



John Armitage

HABITATS OF MARMORA'S WARBLER (*Sylvia sarda*)

These photographs show two typical haunts of the species in Corsica, the upper above Vizzanoya, and the lower near Evisa. The bird is widely distributed in any suitable scrub country from slopes near the coasts to inland among the hills to a height of nearly 3,000 feet (see page 312).



John Armitage

MALE MARMORA'S WARBLER (*Sylvia sarda*) AT THE NEST. CORSEVA, 1957

This species is very similar in size and shape to the Dartford Warbler (*S. undata*), and the characteristically cocked tail is well shown here. The male is almost entirely slate-grey, this colour being darkest on the head, wings, and tail. At close range the head, in particular, can be seen to be almost black. At a distance the whole bird appears black.



John Armitage

FEMALE MARMORA'S WARBLER (*Sylvia sarda*) ON THE NEST: CORSICA, 1937

The female is very similar to the male, though generally more brownish-grey. In both sexes the eye-rim is a vivid red. The nests, usually well clear of the ground, are often, as in this case, substantially built and firmly fixed to the supporting stems. They are built of dead grasses, lined with finer grasses, hair, and perhaps a few feathers (see page 312).



John Armistage

PAIR OF MARMORA'S WARBLERS (*Sylvia sarda*) AT THE NEST
CORSIKA, 1937

The upper shows the female fanning her wings and shielding the young from the rays of the sun. In the lower, the uniform greyiness of the male with the slightly darker head is again well shown. The nest in this case is a more flimsy one, nearer the ground than that shown in plates 42 and 43.

SPECIAL REVIEW

By D. D. HARBER

THE BIRDS OF THE SOVIET UNION. Under the general editorship of G. P. DEMENTIEV and N. A. GLADKOV. (*State publishers "Soviet Science"*, MOSCOW, 1951-54). 6 vols. (In Russian).

CONTENTS OF VOLUME 3 (1951; 680 pages)*

THE volume starts with the Charadriiformes which are dealt with by N. A. Gladkov. The typical race of the Stone Curlew (*Burhinus oedipnemos*) is replaced by the race *astutus* to the east of the southern Urals, the birds between the rivers Ural and Emba being transitional in character. But the typical race appears again in an area to the south east of the Caspian. The status of this form in the European part of the Soviet Union is given mainly on the basis of rather old authorities, some going as far back as 1897. It would seem that there is little recent information. The bird is stated to be generally rare except between the Volga and the Ural where it is numerous. On the other hand *astutus* is generally common and often abundant. Both forms, it is stated, need water for drinking and are usually found near it. The eggs of the race *bogolubovi* of the Cream-coloured Courser (*Cursorius cursor*) have never been described and nothing is known of its nidification.

The Pratincole (*Glareola pratincola*) is found in the European part of the Soviet Union only in Bessarabia, in an area to the east of the northern Caucasus and in Armenia. It is not numerous in any of these parts, but in Asia it is very common in places, e.g. the delta of the Amu-Daria. The nesting of the Black-winged Pratincole (*G. nordmanni*) in Transcaucasia (Armenia) is possible but is not yet fully established. It is common in suitable localities in its normal breeding area.

The Grey Plover (*Charadrius squatarola*) is not given as breeding on Novaya Zemlya as stated in *The Handbook*. In the European part of its area (eastwards from Kanin) it is relatively not very numerous, but on Yamal, in the delta of the Indigirka and on Wrangel Island it is "in the highest degree common." On passage it keeps to the coast and only small numbers are seen in the interior. Its incubation period is stated to be unknown. The Golden Plovers (*Ch. apricarius*) breeding in the former Baltic States belong to the typical form. This may also be the case with the birds from the Leningrad and Novgorod districts, but authentic specimens of birds nesting there are not available. The northern form *altifrons* nests on Kolguev and Vaigach but not on Novaya Zemlya. In the Urals it probably nests as far south as the southern Sosva and Lake Knyaspinskoie. It appears

* Discussions of the contents of volumes 1 and 2 appeared in previous issues on pages 221-224 and 268-276.

irregularly on migration in the interior, being observed in large numbers in some years and not at all in others. This bird nests in the wetter parts of the tundra while the Grey Plover avoids these and selects the drier areas. Mention must be made of the serious errors in the map purporting to show the distribution of the American and Asiatic Golden Plovers (*Ch. d. dominicus* and *Ch. d. fulvus*). Not only is *dominicus* given as occupying the territory of *fulvus* and vice versa, but even when allowance is made for this one finds *dominicus* given as nesting in the Anadyr district of eastern Siberia though the text only gives this as possible.

The distribution of the Dotterel (*Ch. morinellus*) is given as: Kola Peninsula, possibly Kolguev and Vaigach; has been stated to nest on Novaya Zemlya but does not do so according to S. Uspenski; Urals as far south as Yaman-tau; Taimyr; lower Lena and between the Lena and the Kolyma; apparently few in the Anadyr district; in places from north Baikal to Altai. It is abundant in Altai and common enough in the tundra.

The race *tundrarum* of the Ringed Plover (*Ch. hiaticula*) is rejected. It is stated that possibly there is a very gradual increase in the length of wing from west to east, but that "in general it appears that the individual variability of this feature in Ringed Plover completely covers the differences of the 'geographical races' which were separated on the basis of the study of a small number of individuals". It is further pointed out that the wing-length can change from year to year in the same bird. But the writer seems to be unaware that *tundrarum* is stated by *The Handbook* to have, on the whole, not larger but smaller measurements, including wing-length, than those of the typical race. Nor is any difference in colour between the two races mentioned in the present work. The map gives the Semi-palmated Ringed Plover (*Ch. h. semipalmatus*) as definitely breeding in extreme north-east Asia, but the text only gives it as "apparently nesting" there (without any details). The Little Ringed Plover (*Ch. dubius curonicus*) does not sit uninterruptedly: "the birds lightly cover the eggs, in southern localities they leave them uncovered, and the development of the embryo takes place to a considerable extent without the participation of the parents."

The most westerly breeding locality of the Caspian Plover (*Ch. asiaticus*) is the Stavropol steppe where c. 30 pairs were found in 1950 by E. P. Spangenberg. Nesting has been established in the area between the Aral and Caspian Seas (Dementiev found it on the Ust Yurt in 1950) and down the eastern shore of the latter. "Outside the confines of our country Dzungaria has been stated to be a nesting place but unfortunately we do not know the source of this information". A race *veredus* is given as nesting in Mongolia, parts of northern China and Korea. Ringing has shown that Lapwings (*Vanellus vanellus*) from the European part of the

Soviet Union and from western Siberia winter in western Europe, apparently between Holland and Italy. Only a few winter in the Soviet Union, in the region of the southern Caspian. The Soeiable Plover (*Chettusia gregaria*) does not, according to the results of recent investigations, nest in the Ukraine. A Spur-winged Plover (*Hoplopterus spinosus*) was obtained by Nordmann at Odessa in May 1897. This is the only record for the Soviet Union.

The Curlew Sandpiper (*Calidris testacea*) nests only on the Taimyr Peninsula (from the mouth of the Yenesei), the New Siberian Islands and between the mouth of the Kolyma and Chaun Bay. This is a more limited area than that given in *The Handbook*. Observations on the spring passage of this species are stated to be "extremely meagre and inexact". Its incubation period is still unknown. The Southern race of the Dunlin (*C. alpina schinzii*) nests in the Pskov district. The races *centralis* and *sakhalina* are given, but in the systematic observations it is stated that the whole question of the races of the Dunlin is not yet satisfactorily cleared up and that "it is not excluded that future investigations will confirm the correctness of the statement of Tugarinov that the Dunlin forms only two sub-species: the nominate, *C. a. alpina*, and the East Siberian/American, *C. a. sakhalina*". The White-rumped Sandpiper (*C. fuscicollis*) has been once recorded in the Soviet Union, on Franz Josef Land on 28th June 1897. If the Little Stint (*C. minuta*) nests further east than the New Siberian Islands it does so "only in places and in very small numbers". Breeding in the Kirghiz Steppes and elsewhere to the south of its range is not confirmed. It is almost the most numerous wader breeding on Kanin, but it is very rare in the Timan tundra, where it is completely lost amongst the mass of nesting Temminck's Stints, and on the lower Pechora. It is very numerous on Taimyr and the Gyda Peninsula. Temminck's Stint (*C. temminckii*) has been found to have full clutches of fresh eggs between 9th and 20th June on the west Murman coast and the author has found such layings on the Timan tundra from 9th June. Baird's Sandpiper (*C. bairdii*) breeds in the Soviet Union on the eastern part of the Chukotsk Peninsula and on Bolshoi Diomid and Kolyuchin Islands. It is stated that autumn migration from the U.S.S.R. is to the east.

The Peetoral Sandpiper (*C. melanotos*) is known to nest eastwards from the eastern Taimyr and may likewise breed in the western Taimyr. It is very numerous in places, being one of the most abundant of the waders nesting at the Kolyma delta. Autumn migration is stated to be towards the east and apart from the breeding area the species has (apparently) been recorded in the Soviet Union only from Wrangel Island, the Commander Islands and (on one occasion) from near Yakutsk. The breeding area of the Sharp-tailed Sandpiper (*C. acuminata*) remains vir-

tually unknown though it apparently nests in the tundra between the Kolyma and the Indigirka. Its nest and eggs likewise remain unknown.

The Knot (*C. canutus*) has a breeding area in the Soviet Union that is limited to the northern parts of the Taimyr Peninsula to the east of Cape Chelyuskin, the New Siberian Islands and Wrangel Island. The birds of the latter island are attributed to the race *rogersi*, but this is regarded as a "dubius form described on the basis of specimens obtained while on migration". This race does not nest on the New Siberian Islands as has been stated. Though this species is numerous at its nesting sites its general numbers are not large owing to its limited range. It is rarely met with on passage anywhere in the interior. The breeding area of the Great Knot (*C. tenuirostris*) has been discovered only quite recently and is apparently not yet fully known. Nearly all that is known about the nesting of this bird comes from L. A. Portenko. He gives its presumed area as contained by a line from Yakutsk to Verhoyansk, from there to the extreme eastern extremity of the Chukotsk Peninsula and then to the mouth of the River Uda on the shore of the Sea of Okhotsk. A description is given of the eggs of this bird. The Purple Sandpiper (*C. maritima*) breeds on the Kola Peninsula and along the shores of the White Sea. It does not do so between Vaigach and the Taimyr Peninsula and it is the only wader which regularly winters in any numbers in the Soviet Union. The Buff-breasted Sandpiper (*Tryngites subruficollis*) does not, so far as is known, nest in north-east Siberia, despite the statement of Nelson that he found it common there on 1st July, 1881. It has occurred on the Kuriles and on 25th September 1947 one was obtained near the mouth of the Shmitovka on the Gulf of Amur.

The southern limits of the range of the Ruff (*Philomachus pugnax*) are not clear and it is doubtful if it breeds in the Kirghiz Steppes. There are isolated colonies on the Upper Yenesei near Minusinsk and in the Altai steppes. Thirteen Ruffs ringed on spring passage in Italy have been recovered in the Soviet Union, mainly in summer and autumn. One ringed on the Caspian was recovered in France. The territory of the Sanderling (*Crocethia alba*) is insufficiently known. Besides the localities given in *The Handbook* it nests on Severnaya Zemlya and at the Lena delta. It is not numerous in the Soviet Union and is scarce and irregular on migration in the interior. The breeding territory of the Broad-billed Sandpiper (*Limicola falcinellus*) is surprisingly little known. "Apparently this secretive bird belongs to the zone of the northern taiga and the southern tundra but to outline its area of distribution is in essence impossible". It perhaps nests on the Kola Peninsula (the map gives this as definite) but there is no recent confirmation. Otherwise there is no direct evidence of nesting east of Scandinavia, "but we must suppose it sufficiently widely distri-

buted on the basis of the more or less general (but very rare) encounters with this bird while on migration from the western shores of Europe to the eastern shores of Asia". It is supposed that east of the Yenesei the race *sibirica* breeds but as the nest of this form has never been found this must be regarded as somewhat indefinite.

The Snipe-billed Godwit (*Limnodromus semipalmatus*), which is the Asiatic equivalent of the Dowitcher, breeds in small colonies in the Baraba and Kulunda steppes, in Transbaikalia, Mongolia and Manchuria. It seems that these colonies change their sites annually. Most of the information about the nesting of this bird comes from Velizhanin (1926). It may be more common than appears since it is said to be easily confused with the Bar-tailed Godwit. In fact the author is of the opinion that these two species can hardly be separated in the field. The race *scolapaceus* of the Dowitcher (*Limnodromus griseus*) breeds on the Chukotsk Peninsula and in the Anadyr district.

The southern breeding limit of the Spotted Redshank (*Tringa erythropus*) has not yet been fully determined, but it is apparently a good deal further to the north than was formerly believed. Old records of its breeding as far south as Kazan are discounted. It has not been found breeding on the Chukotsk Peninsula or on Kamehatka. The races *eurhinus* and *terrignotae* of the Redshank (*T. totanus*) are not accepted and while the author gives particulars of the distribution of the races *robusta* and *britannica* he states that he only does so on the basis of the claims of western ornithologists which he is not in a position to check. It is doubtful if the Marsh Sandpiper (*T. stagnatilis*) now breeds in Bessarabia, Volhynia and Podolia. In Asia its southern breeding limit is apparently a good deal further to the north than was formerly believed. It does not breed in the Altai and on the upper Yenesei, but there is a separate breeding area in the Far East (Transbaikalia and Manchuria) the limits of which are not yet known. Over much of its area it is rare but it is abundant in eastern Kazakhstan. Armstrong's Sandpiper (*T. guttifer*) has relatively recently been proved to nest on south Sakhalin but no other breeding localities have yet been established. Judging from the following "field description" it is a bird which could easily be overlooked: "In the field reminds one of the Greenshank but is even shyer." The nesting of the Green Sandpiper (*T. ochropus*) in the area between the Caspian and Lake Balkash is doubtful. This bird is particularly numerous on the Pechora and in Eastern Siberia. The breeding area of the Wood Sandpiper (*T. glareola*) does not extend so far south as is stated in *The Handbook*. Apparently it does not nest either in the Ukraine or in the northern Caucasus but it probably does so in Transeaucasia (the map gives this as definite). Nor does it nest in the Kirghiz Steppes.

The map of the distribution of the two races of the Grey-rumped

Sandpiper (*Heteroscelus incanus*) reverses the actual state of affairs, giving *brevipes* for the area of the typical form and vice versa. The nest and eggs of *brevipes* have yet to be found. It is a rather rare bird and on migration is only found in parties of three to five. The typical race nests on the southern slopes of the Anadyr Mountains (Portenko, 1939) and may do so on Kamchatka and elsewhere.

The Terek Sandpiper (*Xenus cinerea*) is extending its range westwards though as yet, it is stated, it does not breed outside the Soviet Union. It is very numerous in places in the taiga. Its incubation period is given as "apparently 21 days". The following is in direct contradiction to what is stated in *The Handbook*: "Probably only the female incubates, but the male keeps near the nest all the time and is usually first to fly up when it is approached while the female feigns injury. The female has one incubation-patch".

The Grey Phalarope (*Phalaropus fulicarius*) perhaps nests in very small numbers on Kolguev and Vaigach. In northern Asia it is very numerous, e.g. in south eastern Taimyr it is the most abundant of all the waders. On migration it is "exceptionally rare" in the interior of the Soviet Union. The Red-necked Phalarope (*Ph. lobatus*) does not nest on Sakhalin and there has been no confirmation of Zarudny's claim that it breeds in the Kirghiz Steppes. This bird is commonly met with on migration, sometimes in large numbers.

The distribution of the Black-tailed Godwit (*Limosa limosa*), particularly in the European part of the Soviet Union, is imperfectly known. There is no confirmation of old records of nesting in Transcaucasia. It is scarce in European Russia but numerous in western Siberia and Kazakhstan. The eastern race, *melanuroides*, appears to be nowhere very numerous. The nesting of the Bar-tailed Godwit (*L. lapponica*) in the southern Urals needs confirmation. The race *menzbieri* (north-east Siberia) is accepted by the author. The American race, *novae-zelandiae*, is stated to nest at the extreme eastern tip of Siberia though the map shows the previous race for this area.

East of the Yenesei the distribution of the race *orientalis* of the Curlew (*Numenius arquata*) is unclear owing to confusion with the Far Eastern species, *N. madagascariensis*. The Slender-billed Curlew (*N. tenuirostris*) is a rare bird and "the separate observations on it are so dispersed territorially and are so fragmentary that it is not possible to form anything like a complete picture of its distribution or to give even the briefest account of its biology". The area of the Whimbrel (*N. phaeopus*) has not yet been clearly defined. The birds breeding between the Volga and the Ural are referred to the race *alboaxillaris*, but the breeding area of this form also is not really known. The Little Whimbrel (*N. minutus*) is regarded as a race of the Eskimo Curlew (*N. borealis*). It has

been found breeding on the water-shed between the Khatanga and the Moniero and on the Verkhoyansk Mountains. It may nest north of Lake Baikal and on the Stanovoi Mountains. The breeding area of the Jack Snipe (*Lyminocryptes minimus*), particularly its southern and eastern limits, is imperfectly known.

In concluding the review of this part of volume 3 it may be of interest to note that several American waders appear not to have been recorded in the Soviet Union, even on a single occasion, though it might perhaps be expected that they would sometimes occur there. Thus no mention is made of any records of the Greater Yellowlegs (*Tringa melanoleuca*) or of the Lesser Yellowlegs (*T. flavipes*).

(To be continued)

NOTES

Little Egrets in Cornwall.—During April 1955 Little Egrets (*Egretta garzetta*) were identified in various parts of Cornwall, and it seems probable that at least 5 birds (just possibly as many as 7) were involved.

On 7th April at Penrose, Helston, Mr. J. L. Rogers and his keeper saw 3 white birds in company with a Heron (*Ardea cinerea*) at the edge of the Loe Pool. They were not certainly identified as other than white herons before they flew up into a tree. On 9th April Mr. A. N. Sykes and I visited this pool in vain, but on the 13th at about 6.30 a.m., Mr. V. L. Tregenza and I saw 2 Little Egrets there. These remained together at that place for about a fortnight.

On 10th April a Little Egret was identified by Mr. L. B. Lewis on Marazion Marsh, where it remained until the 23rd. This bird was filmed in colour by Mr. George Edwards. During 16th-18th April it was joined by an adult Spoonbill (*Platalea leucorodia*) and a very fine pair they made.

On 11th April, Mr. D. G. Field identified a Little Egret at Gwithian, near Hayle. It was not seen there subsequently.

Also on 11th April, Mr. E. A. Rowe saw one at Ruan Lanihorne flats, some 25 miles away. This bird was seen by Mr. A. N. Sykes on 12th April, and it disappeared about the 15th.

On 14th April a Little Egret was also seen at St. Erth, near Hayle, by Miss M. J. Jones and Mr. Sykes. It remained about there until the 23rd. At first we thought it was the Marazion bird that had crossed the narrow neck of land between the two places, but with Messrs. Edwards and Sykes I saw it on 17th April when one was known to be at Marazion. We decided later that it was probably the Gwithian bird. It was the finest of them all, having very long head- and breast-plumes, and a well-developed "train".

I saw and studied all except the Ruan Lanihorne bird. In each case the characteristic feet were seen.

A. G. PARSONS

Little Egret in Gloucestershire.—On 8th April 1955 a Little Egret (*Egretta garzetta*) was indentified by S. T. Johnstone, and others, feeding along the edges of a fresh-water "flash" at the New Grounds, Slimbridge, Gloucestershire. It allowed approach to within about 60 yards and spent most of its time fishing. Sticklebacks and small eels were apparently its prey. It appears that it had been seen at least two days before by the farmer, O. W. Fisher, and it was independently identified on 8th April by M. F. R. Jolley. It remained on the same group of waters until 13th April, and re-appeared for one day only on the 19th. During this period it was seen by a large number of ornithologists.

PETER SCOTT

Little Egret in Pembrokeshire.—A Little Egret (*Egretta garzetta*) was present on Goodwick Moor, near Fishguard, Pembrokeshire, between 20th and 23rd April 1955. It was first seen by P. Baird, who reported it to me. Together we watched the bird for a total of some six hours at ranges varying from 30 to 90 yards. It was also seen by Dr. L. H. Terry, Miss M. J. Mugford, W. H. Butt, and Peter Panting.

The bird was in breeding-plumage, with a very long, drooping crest (longer than its black bill) and elongated scapulars causing a hazy, curling fuzz above its tail. The long black legs, with the characteristic yellow feet, which in some lights appeared yellowish-orange, were clearly seen. It was a very active bird, continually darting about in the water, sometimes even with outstretched wings and its body held almost horizontal. During the period it was watched, the Little Egret was seen to catch and eat some 25 frogs, 1 newt, 1 small eel, 1 small trout and a number of other items that were unidentified. It was put to flight on several occasions, but each time it merely circled low over the moor and glided back to the place from which it rose. It was last seen at 6.45 p.m. G.M.T. on 23rd April when it took off from the moor, circled to a fair height and flew out to sea in a north-easterly direction.

This appears to be the fourth record of this species in Pembrokeshire.

K. SMITH

Little Egret in Norfolk.—On the morning of 23rd April 1955 a Little Egret (*Egretta garzetta*) was seen at close range on Cley Marsh, Norfolk, by W. F. Bishop and myself and later in the day by a number of other observers. It was not seen on the following day.

It appeared, from our experience of Little Egrets in previous years, to be an adult bird in snow-white plumage. The crest and seapulars were fully developed. It had a black bill and legs, and yellow feet. It flew with its head retracted and uttered no note.

It remained on Cley Marsh during the day and, as in the case of previous birds, was observed to feed on sticklebacks.

A. H. DAUKES

[We have received preliminary reports of two other Little Egrets in Britain in 1955—one in the Seilly Isles and one in South Uist, Outer Hebrides. Both were seen in May, some time after those described above. Details will appear as soon as possible.—EDS.]

Nest-building by immature Flamingoes.—Visiting a colony of Flamingoes (*Phoenicopterus ruber*) nesting in the Camargue, S. France, on 10th June 1954 Mr. P. B. Platts and I noticed an immature bird with dark-coloured legs engaged in nest-building. It stood by an already constructed nest, possibly of the previous season, and went through the motions of seraping up mud and plastering it on the nest. From time to time this individual and a neighbour made passes at one another with their bills, as fully mature nesting birds do. This behaviour was apparently a form of defence of the nesting area. At this time many of the birds in the colony had fair-sized young. The nest at which this Flamingo worked was located at a depression in the mud-bank on which the colony was situated. It seemed that it had been able to secure a place for these building operations only at a point which had been avoided by the mature Flamingoes. It carried a ring on one of its legs. As M. Henri Lomont of the *Société d'Acclimatation de France* informed me that rings of this type had been used for the first time to mark the young in 1953 this bird would have been a year old. There are many instances known in other species of immature birds manifesting activities connected with reproduction without reaching the point of effectiveness.

EDWARD A. ARMSTRONG

Pintail in the fens in the 1954-55 winter.—In a recent note (*antea*, vol. xlvii, pp. 395-397) summarizing the past and present status of the Pintail (*Anas acuta*) in the fens, I suggested that the numbers occurring on the Ouse Washes might be continuing to increase, and it may be of interest to record that this trend was confirmed in a spectacular manner in 1954-55. With no flocks greater than 120 reported elsewhere in the area, the numbers on the one water are a good guide to the total population. As mentioned earlier, fully complete counts are not made frequently on this water; the following table therefore summarizes a large mass of information very kindly contributed to me, and where indicated minor interpolations have been used to extend the series of estimated totals. I am much indebted to Dr. W. R. P. Bourne, Messrs. C. D. T. Minton, M. J. M. Larkin, T. C. Smout, A. E. Vine, and others, for their most useful notes.

DATE	NUMBER COUNTED	ESTIMATED TOTAL
1954		
before 10th Nov.	Nil	Nil (no floods)
14th Nov.	Nil	Nil
28th Nov.	250	250
21st Dec.	320	340
25th Dec.	500	(over 500)
1955		
30th Jan.	675	700
6th Feb.	860	860
11th Feb.	2,570	2,570
6th Mar.	3,400	3,450
10th Mar.	4,100	4,200
13th Mar.	over 4,100	c. 5,000
15th Mar.	2,700	2,700
1st Apr.	c. 1,500	(c. 2,000)
19th Apr.	c. 400	(over 400)
30th Apr.	8	9

With the birds intermingled with much larger numbers of other species, these counts cannot be expected to be very accurate. It is therefore gratifying that numbers quoted by different observers for the same areas on the same or close dates agreed in almost all cases to within 10-15%, for this species as well as for others—surely not an undue margin of error. In the one case where the numbers given differed considerably within a few days—the counts for 13th and 15th March—both counts were made by the same observer.

It will be noted that the dates of arrival of the birds agreed with the description in my previous note, with the exception of the unprecedented numbers in November and December. This early arrival was preceded by an abnormal record of at least 90 Pintail in the Welland estuary of the Wash on 7th November 1954—a place and time where the species is by previous records most uncommon.

I. C. T. NISBET

Red-crested Pochard drakes bringing food to their mates.—

During early April 1954, I had four pairs of Red-crested Pochard (*Netta rufina*) under observation in a London park. Each drake and duck were together, and each pair were some distance from the next. Some of these birds were pinioned, and others full-winged.

During the course of watching one pair it was noticed that the male was diving repeatedly for food and that on surfacing he swam towards his mate with a bill-full of green "weed" and shared it with her. It was clear that this male was collecting the food, while the female waited patiently on the surface. In all, I saw this happen a dozen times.

On watching the other pairs closely, it was soon clear that in their case, too, the males were collecting the food from below the surface (it was always a green "weed") and swimming to their mates and sharing it. On one occasion I was able to see this happen simultaneously with three of the pairs and each female

waited on the surface while the drakes were diving for the "weed".

Later, on several occasions, I saw the hens diving as well, but although they brought the "weed" to the surface, it was devoured immediately and they did not swim with it to their mates.

On 1st and 2nd June 1954 Messrs. W. G. Teagle and W. H. Punter, and subsequently I myself, saw adult females diving and bringing up the same green matter for their young (aged about four weeks or over, so far as my own observations were concerned). W.G.T. had samples of this "weed"—which grows prolifically in the lake in summer—identified by the British Museum (Natural History) and kindly informs me that it is the alga *Rhizoclonium hieroglyphicum*.

E. H. GILLHAM

Lesser White-fronted Geese in Kirkeudbright.—During the past two winters Lesser White-fronted Geese (*Anser erythropus*), two in 1954 and three in 1955, have been observed among the flock of Bean Geese (*A. arvensis arvensis*) which annually frequent a localised area in the Stewartry of Kirkeudbright. These are the first definite records of the species in Scotland.

On 20th February 1954 an immature bird was first identified by a party of ornithologists including Miss M. I. Kinnear, D. G. Andrew, A. G. S. Bryson, J. Hoy, G. Waterston, A. B. Dunearn, W. Austin and the writer. The presence of an adult bird was strongly suspected at the same time and established beyond doubt on 7th March by Prof. M. F. M. Meiklejohn and the writer. Both birds remained in the vicinity until 14th March. Shortly after this date they apparently left with the Bean Geese.

The immature was a very small goose, even for a Lesser White-front. On the ground it was dwarfed by the Bean Geese, being strikingly short in the leg. Seen beside a Curlew (*Numenius arquata*) it did not appear much larger. In flight it could be picked out at once by size, narrow wings and quick wing-beats. The general body colour somewhat resembled a Bean Goose, though darker and lacking clear pale edges to the feathers of the upper-parts. Also, unlike the adult Lesser White-fronts, it showed no distinct white fringe where flanks overlap wing-coverts. There were no bars on the under-parts. The white blaze on the forehead was very small and scarcely visible side-on. The bill was short and stubby, rather bright pink in colour, and the legs were orange-yellow, paler than those of the Bean Goose. The golden yellow eye-lids could be seen clearly through a telescope at 100 yards.

The adult was appreciably larger, approaching the size of a Pink-footed Goose (*A. arvensis brachyrhynchus*). It was generally lighter in colour than the immature, with a distinct chestnut tinge to the hind neck. The white upper fringe to the flanks was well defined. On the belly were three or four distinct short black

bars. The white frontal blaze, more Coot-like in shape than that of the White-fronted Goose (*A. albifrons*), extended as far back as the eye. The bill and legs were brighter than in the immature and the golden yellow eye-lids could be seen through a telescope at 400 yards in strong light.

In 1955 two adults and possibly a third bird were first seen by Dr. J. Berry, A. B. Dunean, Prof. Gustav Swanson and the writer on 23rd January. The presence of a third adult was confirmed by the writer on 3rd February. One or more of these were seen by a number of ornithologists, among them Peter Scott, on numerous occasions until 6th March. Again they apparently left with the main body of the Bean Geese, between 6th and 9th March. The plumage of the three birds in 1955 closely resembled that of the 1954 adult. All the typical characters were well seen including the eye-lids. On at least one occasion the writer heard a high-pitched call from one of the birds.

During their stay the Lesser White-fronts behave as integral members of the Bean Goose flock and show no tendency to associate among their own species within the flock. The Bean Geese themselves do not begin to appear in the area until mid or late December and peak numbers, between 200 and 230, have not in the last three years been attained till late January or February, coincident with the first appearance of the Lesser White-fronts. Many Grey-lag Geese (*A. anser*) and a few Pink-feet regularly feed with the Bean Geese and at times they are joined by some Greenland White-fronts (*A. albifrons flavirostris*) from the flock which winters in a neighbouring locality. In February 1954 a Canada Goose (*Branta canadensis*) joined the throng, while in 1955, during January and February, it was often possible to see all the foregoing species together, except the Canada, and in addition and apparently albinescent Grey-lag Goose and a Bean Goose of a pale silvery grey colour. On 24th February the writer saw a goose scarcely larger than a Lesser White-front with plumage and colour of soft parts fairly similar to a Bean Goose, although much darker on the under-parts; this bird seemed to raise the possibility of hybridisation between Bean and Lesser White-front in this flock.

In fine sunny weather the Bean and Lesser White-fronted Geese feed mainly on the grassy slopes of a small hill (knowe) which is surrounded on three sides by marshy ground. In wet, windy weather, and when the ground is under snow or much frosted they repair to the adjacent marshy ground or to other marshes and more sheltered fields not far away. They generally roost on hill lochs a few miles away though they may sometimes make use of a nearby river.

While all the other geese which regularly visit the locality arrive in October and stay at least until April, the Bean Geese with the Lesser White-fronts appear to spend the early and late winter

elsewhere. It is perhaps interesting to speculate whether Lesser White-fronts have long been accompanying these Bean Geese, undetected. In this context it is extremely probable that one also occurred in 1953; on 1st February the writer with D. G. Andrew, R. W. J. Smith, C. Walker and G. Mills had a brief view of a goose with a white forehead which was very strongly suspected to be a Lesser White-front. Further searches never gave a conclusive sight of this bird in 1953, but this is not surprising in the light of recent experience which shows that parts of the flock may become detached, using alternative feeding grounds, so that known individuals are by no means always to be found in the main feeding area.

DONALD WATSON

Lesser White-fronted Goose in Cardiganshire.—At about 6.0 p.m. on 11th February 1955, on the Dovey Estuary, Cardiganshire, some 150 White-fronted Geese (*Anser albifrons*), with which there were also a few Pinkfeet (*A. arvensis brachyrhynchus*), flew over me. I shot one goose and on picking it up I found it to be a Lesser White-fronted Goose (*A. erythropus*). It proved to be an adult female.

The small-size, yellow eye-ring, short beak, and prominent "white front" extending above and beyond the eye made identification positive. The following measurements were obtained: wing 385 mm., beak 35 mm., tarsus 60 mm., tail 116 mm. The bird weighed 4 lbs. 1 oz. Its plumage was darker than that of a typical Whitefront (*A. a. albifrons*) but not quite so dark as that of the Greenland race (*A. a. flavirostris*). It had been feeding exclusively on the White Beak Sedge (*Rhynchospora alba*).

This is the first record of a Lesser Whitefront in Wales.

W. A. CADMAN

[In connection with these, the first Scottish and Welsh records of the Lesser White-fronted Goose, we feel that it is opportune to publish a summary of the records from the New Grounds, Slimbridge, Gloucestershire, where this species has occurred in almost every winter since 1945-1946, when two were first identified there (*antea*, vol. xxxix, pp. 77-79; see also vol. xl, pp. 280-281). We are grateful to Mr. Hugh Boyd for the following details:

Winter 1945-46: 2	Adult 16.12.45-30.12.45 or later
	Adult 16.12.45-3.2.46 or later
Winter 1946-47: 3	Adult 28.12.46-2.3.47
	Adult 2.1.47-3.3.47
	Adult 3.1.47-16.3.47
Winter 1947-48: Nil	
Winter 1948-49: 1	Ad. ♂ 20.12.48-13.2.49
Winter 1949-50: 3	Ad. ♂ 6.1.50-1.3.50
	Ad. ♀ 6.1.50-1.3.50
	1st winter 15.1.50-1.3.50
Winter 1950-51: 6	Adult 20.12.50-13.1.51
	Adult 28.12.50-17.2.51
	Adult 20.2.51-25.2.51

		Ad. ♀ 18.3.51-late 5.51 (injured)
		1st-winter 26.1.51-17.2.51
		1st-winter 26.1.51-19.2.51
Winter 1951-52:	2	Ad. ♀ 3.2.52-22.2.52
		Ad. ♂ 4.3.52-9.3.52
Winter 1952-53:	2	Adult 12.12.52-1.3.53
		1st-winter 27.11.52-18.3.53
Winter 1953-54:	4	Adult 7.10.53-15.2.54
		Ad. ♀ 25.1.54-5.3.54
		Ad. ♂ 25.2.54
		1st-winter 16.1.54-2.3.54
Winter 1954-55:	1	Adult 13.1.55-13.3.55
Total	24	(19 adult, 5 1st-winter)

The only other record of this species in the British Isles since the War was of one shot at Breydon marshes, Norfolk, on 24th January 1949 (*antea*, vol. xlii, p. 295). It is of interest to note that only one of the records is earlier than December.—Eds.]

Buzzard killing Tufted Duck.—On 20th January 1955 my friend, Mr. F. Doel, a keeper on the Longleat Estate, Wiltshire, saw a Buzzard (*Buteo buteo*) kill a Tufted Duck (*Aythya fuligula*) on one of the ponds on the estate. The pond, like the others in the area, was frozen, and Mr. Doel was looking at the 8 or 9 Tufted Duck on the ice when the Buzzard swooped from the trees and picked one up. The Buzzard had removed the duck's head and begun to eat it before it was disturbed by Mr. Doel.

For some days previously Mr. Doel had known that something was killing Moorhens (*Gallinula chloropus*) and Coots (*Fulica atra*) as he had seen the heaps of plucked feathers, and it seems probable that this was also the work of the Buzzard.

No bird of the size of a Tufted Duck is mentioned in *The Handbook* as the prey of the Buzzard, and it seems possible that this instance may be a result of myxomatosis in this area wiping out the rabbit population, coupled with a shortage of other food while the snow was on the ground.

GEO. BRIGHT

Sparrowhawk feigning injury.—As *The Handbook* makes no mention of disablement reaction in the Sparrowhawk (*Accipiter nisus*), I would like to record that on 5th September 1950, near Thurnham, Kent, a female Sparrowhawk flew down from the tree beneath which I was standing, and some ten yards away behaved very like a Ringed Plover (*Charadrius hiaticula*) does during its distraction display. With one wing raised and the other dragging on the ground as if broken, pausing to see if it was being followed, it shuffled away with every semblance of injury. Because of an intervening fence I could not follow the bird, and it soon came to a halt and remained quite inactive: no reason could be found for the bird's behaviour. It should be added that before the bird flew down to the ground from the tree above me, I had seen it fly without difficulty, so there was no possibility that it was really injured.

PETER R. GRIFFITHS

Grass in stomachs of Kestrel and Little Owl.—I was interested in the recent notes by D. Poulter (*antea*, vol. xlv, p. 414) and R. V. Jackson (*antea*, vol. xlvii, p. 398) on the above subject. I have examined a number of hawks and owls of various species during the past few years, and have been surprised to find several containing grass and other vegetable matter. Of those birds examined, only about half contained any stomach contents at all, so that it is only these which are dealt with in the records mentioned below. There is a total of 6 Little Owls (*Athene noctua*), 2 Kestrels (*Falco tinnunculus*) and 1 Tawny Owl (*Strix aluco*), in which vegetable matter was recorded as follows (analysis of stomach contents is not given in detail).

Little Owl.

- (1) ♀, 5th December 1952. Coleoptera (adults and larva); partially digested vegetable matter.
- (2) ♀, 5th December 1952. Coleoptera (adult); mouse; partially digested vegetable matter.
- (3) ♀, 21st January 1953. Coleoptera (adult and larva); pieces of grass roots; ?flesh.
- (4) ♂, 13th February 1953. One-third full of grass; small piece of bone.
- (5) ♀, 27th October 1953. Coleoptera (adults and larvae); partially digested vegetable matter.
- (6) Ad., 17th August 1954. Full of grass and coleopterous remains.

Kestrel.

- (1) ♀, 29th January 1953. Vegetable matter (?grass); corn husks; seeds; Coleoptera (adult); feathers; long hairs.
- (2) ♀, 17th July 1953. Half young rat; ant; centipede; grass.

Tawny Owl.

- (1) ♂, 22nd April 1953. Half full of grass and roots; 1 beetle.

It is interesting to note that various insects, earthworms, etc., figure prominently in the diets of these three species, so that some vegetable matter may be taken up inadvertently. However, in those cases where grass or other plant food occurs in relatively large quantities, it does suggest that this is purposely eaten.

The following numbers of the above three species, and of five others, have been examined, in which food of some sort or another, other than that of a vegetable nature, has been found.

Little Owl: 18 (9 males, 5 females, 2 juveniles and 2 unsexed).

Long-eared Owl (*Asio otus*): 2 (1 male, 1 female).

Tawny Owl: 2 (1 male, 1 female).

Merlin (*Falco columbarius*): 1 (male).

Kestrel: 6 (3 males, 1 female, 2 juveniles).

Sparrowhawk (*Accipiter nisus*): 13 (9 males 4 females).

Buzzard (*Buteo buteo*): 2 (females).

Hen Harrier (*Circus cyaneus*): 1 (male).

JOHN ASH

Unusual behaviour of Black Grouse in autumn.—When observing migration on the Lista Peninsula in S.W. Norway in September and October 1952, we frequently saw Black Grouse (*Lyrurus tetrix*) about some low hills near the coast. In late

September we noticed that these grouse were very restless, and on 28th September we watched several birds (about 8 were involved) perching persistently and for long periods on some electric power cables that crossed the hills, about 30 feet from the ground. Two birds flushed from such a perch were seen to fly round and re-settle some 200 yards further up the wires. The birds perched without any apparent difficulty, in a rather horizontal attitude.

Still more remarkable behaviour was noted on 1st October a few miles along the coast. 2 Black Grouse were flushed from low sand-dunes adjoining the beach, and flew straight out to sea without hesitation; unfortunately they were soon masked from our sight by some higher dunes, and could not be followed. The ground in this area is sandy and very flat, and the nearest hills are over two miles away.

We believe this behaviour to be symptomatic of "migratory restlessness", as described by G. Rudebeck (*Var Fagelvärld Supplementum* 1, 1950) and others, for a number of "non-migratory" species in autumn. Rudebeck quotes examples for two other members of the Tetraonidae, the Partridge (*Perdix perdix*) and the Pheasant (*Phasianus colchicus*), but we know of no record of similar behaviour in the Black Grouse. The close connection adduced by Rudebeck between migratory restlessness and "true" migration appears also in this case: we found some evidence for a small-scale autumn movement of Black Grouse towards the hills and steeper islands along the Lista coast. Our observations do not, however, support his conclusions that the threshold of release of migratory behaviour in "non-migratory" species is reached only after prolonged stimulation, with a consequent correlation with the end of a peak period of migration; our observations were made shortly before, and early in, a period of intense movement, with a peak on 30th September—details were published in a report on observations at Lista in 1952 (1953, *Stavanger Museum Opuscula, Series Zoologica*, No. 8).

M. J. M. LARKIN and I. C. T. NISBET

Buff-breasted Sandpiper in Yorkshire.—At about 1000 hours on 6th September 1954 Miss Audrey P. Leach and myself, accompanied by Stephen Martin, saw a fairly small, buff and brown wader feeding near the Spurn Bird Observatory, Yorkshire, in the same area in which the Stilt Sandpiper (*Micropalama himantopus*) had been feeding a few days earlier (*antea*, pp. 18-20). We watched the bird 1½ hours on this occasion during which time it was feeding and flew only once. Excellent views were obtained and approach to 20 yards was possible, the bird looking more like a small plover than a sandpiper.

On our return to the Observatory Messrs. W. F. Fearnley and H. S. Williamson and Mrs. O. M. Pennock were told of the find but not given details. They were able to trace the bird and make

their own observations, whereupon subsequent comparison of field-notes confirmed the original observers' impression that the bird was a Buff-breasted Sandpiper (*Tryngites subruficollis*). This record is the first for Yorkshire and the 24th for Britain, and coincides with other records of N. American waders.

When first seen the bird was in fairly close company with Dunlin (*Calidris alpina*) and Ringed Plover (*Charadrius hiaticula*), but it was noted that, as a result of its different feeding-habits, it kept slightly apart from them. The graceful stepping gait as it picked its way through small areas of waterlogged grass was noticeable and also the avoidance of deeper water and stretches of mud. Whilst feeding it appeared to pick small insects off the grass and when attempting to catch them would sometimes turn very quickly to do so.

It walked with an erect but not stiff carriage, the comparatively long, slender neck and small, round head then being apparent. In size it was slightly larger than the Dunlin and Ringed Plover with which it associated, and later, when near a mixed party of adult and juvenile Ruffs (*Philomachus pugnax*), it was clearly smaller than the smallest Reeve.

The face, neck, breast and under-parts as far as the legs were a rich buff, the rest of the under-parts being a paler shade of buff becoming progressively paler towards the under tail-coverts, which were a pale cream. The back and wings gave a mottled appearance with dark and light tones of brown and fawn, the mantle, back and scapulars appearing lighter than those of Ruff, which species it resembled. In flight, which was strong and swift, the underwing was only glimpsed on three occasions, and appeared dirty white. There was no wing-bar, nor any white on the tail, the central feathers of which appeared rather darker than the rest. The bill was short, straight and dark; the legs were yellow; and the eyes appeared to be dark.

The bird was watched during the following morning, 7th September, and early afternoon, but could not be found later.

J. KEITH FENTON

[This record has already appeared in the Yorkshire Naturalists' Union Ornithological Report for 1954 (*The Naturalist*, No. 853, p.80).—EDS.]

Aberrant rump pattern in Ruff.—With reference to the notes (*antea*, p. 88) describing a white "V" or horse-shoe instead of two white oval patches on the upper tail-coverts and rumps of Ruffs (*Philomachus pugnax*) in England, I recall being puzzled by a similar character on a Ruff in Arabia. One was present on the salt-pans at Aden from 1st July to 4th August 1946. Its plumage was at first very dark, almost black, but without a tuft or ruff. Gradually the black disappeared as the moult advanced.

This unfamiliar black plumage combined with what I thought to be, at a distance, a white rump, made me think the bird must be a Spotted Redshank (*Tringa erythropus*). Later, however, with closer views, I was able to see that this white took the form of a backwards pointed "V" across the base of the tail.

P. W. P. BROWNE

Mediterranean Black-headed Gull in Northumberland.—On 20th March 1955, with Messrs A. Blackett, Brian Little, and L. G. Holloway, I visited the Fish Quay at North Shields, Northumberland. This is on the north bank of the River Tyne, not far from the mouth and is an excellent feeding ground for gulls. After a few minutes we noted an unusual bird resting on the water in front of a Kittiwake (*Rissa tridactyla*). Eventually this bird flew towards us and settled beside a Black-headed Gull (*Larus ridibundus*), and we were able to identify it as a Mediterranean Black-headed Gull (*L. melanocephalus*). In size it was approximately the same as *ridibundus*, but it appeared squatter and heavier. The head, except for the forehead, was jet black, this colour extending well down the nape. The forehead was white, mottling into black above the eye, and there was a small white spot below the eye. The bill was much stouter and heavier than that of the Black-headed Gull, rich red in colour and darkening slightly towards the tip. There was a smudgy sub-terminal spot on the lower mandible and a slight mark on the upper. The mantle, scapulars and secondaries were blue-grey and paler than those of *ridibundus*. The primaries were all white, fading into grey. There was no white leading edge to the wing, as in *ridibundus*. In flight it was noticed that the underwing was pure white, and that the legs seemed brownish (though on another day, at close range, they were found to be bright red). The white tail was not quite as rounded as that of the Black-headed Gulls. In flight, with legs dangling, it picked food off the surface of the water rather like a tern.

On 22nd March Mr. F. G. Grey saw the gull at the Fish Quay, and noted that it was ringed. On 24th it was seen again by Dr. H. M. S. Blair. On the 27th James Alder and myself failed to find the bird in the morning, but in the afternoon at 1655 hours we found it again and watched it for over an hour at distances of from 6 to 30 yards. It was noticed that by now the head was completely black, apart from a white mark above, and touching, the upper mandible and prominent white spots above and below the eye. We saw the aluminium ring on its right leg.

THOMAS H. ALDER

[It is perhaps of interest to add that a large number of Mediterranean Black-headed Gulls have been ringed on the island of Orlof, where the Dnieper runs into the Black Sea. M. Noël

Mayaud, who has made a special analysis of the movements of this species from the recoveries of the birds marked at Orlof (*Alauda*, vol. xxii, pp. 225-245) informs us that he does not know of any other places where this species is ringed, but adds that this, of course, cannot be regarded as certain evidence that the Northumberland bird came from Orlof.—Eds.]

Black-headed Gulls perching in trees and eating acorns.—On 18th October 1954 I noticed about 30 gulls flying over and around some large oaks at Portchester, Hampshire. A few appeared to settle on the trees, but from my observation point it was difficult to be certain of this. About the same time the following day I again visited the place and this time with the aid of binoculars I saw several Black-headed Gulls (*Larus ridibundus*) perching on the outermost top branches and picking off sprays of acorns. Insects may have been the initial attraction, but there was no doubt that the gulls were repeatedly swallowing the acorns after shaking off the attached leaves and twigs. A bird swallowing an acorn would jerk its head several times with its bill pointing upwards.

When the birds had moved to another area, I examined the ground beneath the trees. Hundreds of acorns lay about, and it was surprising that birds unused to such a perch were able to pull off such large sprays. H. E. Woods

Inland flight of Kittiwakes from the Wash.—On 5th December 1954 we witnessed a remarkable inland movement of Kittiwakes (*Rissa tridactyla*) leaving the Wash near Holbeach, Lincolnshire. Between 1230 and 1340 hours G.M.T. compact flocks of 37, c. 60, 13, 12, 3, and 23 birds respectively flew purposefully S.W. up the Welland channel, rising steadily, and continued inland without hesitation. Another flock of 94 crossed the sea-wall and left inland to S.S.W., not following the river. Despite a careful watch during the next hour we saw none of these 242 birds returning; the conformation of the estuary would be expected to favour this observation, but naturally we cannot be sure that the birds had in fact departed overland. The weather was fine and clear, with a S.W. wind moderating very rapidly after several days' gales.

Dr. W. R. P. Bourne and Mr. T. C. Smout (see *Cambridge Bird Club Report*, 1954) observed regular overland migrations of certain markedly coastal waders and terns in August 1954, following the same track and with more or less the same behaviour. It would be unwise, however, to press this analogy too closely with an isolated observation of the still more maritime Kittiwake, which is normally decidedly uncommon on the coasts of the Wash.

DAVID JENKINS and I. C. T. NISBET

Bee-eater in Essex.—On 16th August 1954 I identified a Bee-eater (*Merops apiaster*) at Felsted, Essex. The bird was first seen at 8.30 a.m. perched in the top of a dead oak-tree at the side of a road along which I was driving. Stopping the car some 20 yards away, I confirmed my first impression that it was a Bee-eater, a bird which I have seen many times in Africa. Through binoculars I clearly saw the long, decurved, black bill; the yellow throat with a faint dark line separating it from the blue-green under-parts; the chestnut back and rather darker head and nape; the blue-green wings with brown markings on the upper coverts; and the long, green tail with the elongated central feathers.

I was particularly interested to observe the effect which this bird had on many Blue and Great tits (*Parus cæruleus* and *major*), several Chaffinches (*Fringilla cælebs*) and a few Yellowhammers (*Emberiza citrinella*). These birds were very excited by the presence of the Bee-eater, and were mobbing it as if it were an owl. Each time the Bee-eater flew in a circle from the tree, they all chased after it, chattering away. I never observed this in Africa.

I watched the bird for fifteen minutes. When I returned in the afternoon there was no sign of it. S. E. LINSELL

Early Roller in Dorset.—On 7th April 1955 a Roller (*Coracias garrulus*) was clearly identified near Yetminster, Sherborne, Dorset. It was seen by Mrs. A. L. C. Zimmer at close range from the windows of a very slow-moving local train, over which it flew, and then watched flying across a field towards a distant tree. The observer immediately realized it was a bird entirely unknown to her, and gave an excellent description of it soon afterwards to Miss M. D. Crosby, to whom I am indebted for reporting it to me. I have since discussed the record with Mrs. Zimmer, and am grateful for her permission to publish it.

In size and build it was reminiscent of a Jay (*Garrulus glandarius*), but quite different in colour; its strong flight was more suggestive of a "queer-looking pigeon". The most striking features were: plumage mainly fairly bright pale blue (including head, neck and under-parts), brighter blue on parts of wings and tail; contrasting strongly with bright chestnut mantle and blackish flight feathers, also with some dark markings on tail. The blue was not as brilliant as in the Kingfisher (*Alcedo atthis*).

This appears to be the first Dorset record of the Roller since 1868. According to *The Handbook*, it is only an occasional vagrant to the British Isles in April. K. B. ROOKE

Hooded Crows attacking Black-headed Gulls.—I have only just seen N. Tinbergen's note on a Carrion Crow (*Corvus corone*) striking a Lapwing (*Vanellus vanellus*) in the air (*antea*, vol. xlv, p. 377), and I was very much interested as I had seen something

quite similar in Hamburg, Germany, about two months earlier.

On 14th February 1953, during frost, I was by the Binnen-alster in central Hamburg when I saw a young Black-headed Gull (*Larus ridibundus*) being chased and forced down on the ice by a Hooded Crow (*C. cornix*). Once it was on the ground, three or four Hooded Crows at a time stood on the screaming Black-headed Gull, pecking at its head. In the end it escaped, at first with very unsteady flight, vainly pursued by the Hooded Crows. Shortly afterwards, two Hooded Crows again managed to settle on a Black-headed Gull. After about 15 minutes they had pecked it to death, having plucked it while it was still living. The Crows went on pecking at the corpse long afterwards.

At no time could I see any trace of a combined attack from the other Black-headed Gulls present or even intense excitement among them.

DIERK FRANCK

REVIEWS

THE WREN. By E. A. ARMSTRONG. (*Collins*, "New Naturalist" special volume, London, 1955). 312 pages, 20 photographs, 41 text-figures. 30s.

THIS notable addition to the series of "New Naturalist" monographs has, in many ways, a wider scope than the others published to date. It is the fruit of a long study which has aimed not at the exhaustive analysis of a particular facet of the Wren's life, but at a general survey of its natural history. Behaviour in particular is treated with the insight and imagination to be expected from the author of *Bird Display and Behaviour*. Perhaps the unique aspect of Mr. Edward Armstrong's book is that it also surveys the whole wren family. He draws both on his own knowledge of the races of *T. troglodytes* in England, Iceland, the Shetlands, the Hebrides and St. Kilda, and on the published and unpublished work of others, especially Kluijver's on Wrens in Holland, Kendeigh's on the House Wren, and Welter's on the Prairie Marsh Wren. In spite of the inevitable incompleteness of the survey, it yields many interesting and suggestive conclusions. Differences in the behaviour of the British and St. Kilda races, for example, are related to the poorer feeding-conditions of the latter.

Wrens are small and difficult to observe, and it is not surprising that their displays have been analysed in less detail than those of some other species. But by the same token, perhaps, Wrens themselves have some difficulty in contacting each other by sight, and instead rely largely upon voice. The longest chapter is devoted to the large and varied vocabulary. There are at least fourteen call-notes, and five types of song. As in other species, the male's song is linked with territorial behaviour, and since this persists more or less throughout the year, song is

probably more continuous through the year than that of any other bird in Britain. As every bird-watcher knows, it can be incredibly loud—audible, we are told, at 600 yards—and we learn that the Chippewa Indians have a name for their local wren, meaning “a big noise for its size”. Though male Wrens are probably among the most quarrelsome of all Passerines, females show no sign of territorial behaviour beyond occasionally attacking birds near the nest. Nevertheless they avoid nesting close together.

Wrens are remarkable for their energies in other spheres. The male is responsible for the building of nests, and usually makes about six within his territory each year, though up to twelve have been recorded. The female selects one, and lines it when she is ready to lay. The sites chosen are sometimes as picturesque as those of the Robin, and there is a delightful photograph of a female peeping out from a nest in a man's coat, hung in a greenhouse. There is clear evidence that wet material is preferred for nest-building, which is often started off by a shower of rain, and they have been seen to dip moss into water before carrying it to the site. Apparently the contraction which occurs on drying serves to compact the walls of the nest. Having enticed a female into the nest, some males then seek occupants for other nests, and about half actually take more than one mate, some as many as six. Usually a new one is not taken until the previous one is incubating, but there are occasional, true polygamists, engaging with several simultaneously. As would be expected the bulk of the feeding of the young is done by the female, though the male joins in when they leave the nest. They are brought back by the parents to roost at night, either in a nest or in some other hiding-place, and have even taken charge of occupied nests of other species for the purpose. Cold is of course one of the great dangers to which so small a bird is exposed, and in hard weather adults also roost communally for warmth. At one roost in an old House Martin's nest, twenty-two Wrens entered in succession!

One question prompted by this book concerns its abundance of tables and graphs. The general reader, for whom one may assume this book is primarily intended, will find some of them conveying interesting facts in the clearest way. But many only describe phenomena that are already well known in other species (e.g. in the chapters on song and breeding behaviour); worth mention, but hardly warranting a display of detailed, systematic data, except for the specialist. Furthermore much of it has previously been published in scientific journals and has presumably already reached those who can best interpret it. As it is, it tends to crowd and confuse some parts of the text, that otherwise reads very well. It is also less heavily studded with references than some of this author's work, where the richness of his ideas, here readily accessible, is sometimes hidden away among reviews of the work of others.

P. MARLER

WILD FOWL DECOYS. By JOEL BARBER. (*Dover Publications Inc.*, New York, 1954). 165 pages and appendix. 138 plates (4 in colour). Issued through Vision Press Ltd. 65s.

THIS book has little to say about wildfowl decoy establishments but concerns, rather, artificial decoy-ducks. It is an unabridged republication of the first edition, but with the addition of a new biographical preface about the author and it has fourteen photographs and drawings published for the first time. It is primarily a book for the collector of "dummy" wildfowl, but is remarkable for its enthusiastic spirit and for the excellence of its illustrations, most of them from the pen and brush of that skilled formal artist, the late Joel Barber. To the general ornithologist it seems to be the last word on the subject. It hardly touches on duck-decoys as we know them in Europe, but this is because no such decoys existed in America in Barber's life-time. But it deals very fully with the structure of almost every type of wooden (solid and hollow), cork and composite decoys, and the ballasting, mooring and anchoring of same. It traces the history of such decoys in North America, region by region. There is a fascinating account of the Nova Scotia one-man sea duck-tub with its fleets of decoys, of which twelve "windward tollers" are anchored ahead of the tub and thirty-six "leeward tollers" are attached in three lines behind the tub, with three lines of five coots in tow thrown in for good measure. In this tub, which was almost lawash, the older Nova Scotian fisherman rode out a wintry sea, and shot down migratory Eider and other ducks as they flew up into the wind; as they fell into the sea and drifted downwind, a dory was in attendance to pick them up. All this has of course been changed by the Act protecting migratory wildfowl.

This is an excellent book for the student of wildfowl, whether he is a shooter or a ringer. The illustrations and diagrams and blueprints of ducks could not be better. This book was written before the advent of self-inflating rubber decoys, which the older wildfowler would probably scorn.

R.M.L.

THE RING. Edited by DR. W. RYDZEWSKI, 1 Altyre Rd., Croydon. No. 1: October 1954, 3s. No. 2: February 1955, 4s.

THE need for a special periodical for the international exchange of ideas and information between the various ringing centres emerged at the International Ornithological Congress at Basle, where Dr. Rydzewski organised a ringing exhibition, and with his characteristic devotion to ringing matters he has now produced *The Ring* as a private venture.

To quote from the introduction to the first issue, all the problems concerning ringing, trapping, colour-ringing, publishing, etc., theoretical or practical ones, will find their place in *The Ring*. It

will include information about new schemes and stations, the full list of recent publications, information on non-ornithological rings, etc.

The first number contains important proposals on the publishing of recovery reports; notes and news from countries in 3 continents; reports on meetings in Basle; recoveries of particular interest; recent literature. The second issue includes details of some punch-card systems for recoveries; while notes and news, recoveries, recent literature, and requests for information about mystery rings seem destined to be regular features. It also contains the comments received from ringing centres in 10 countries including Britain, Spain and Jugoslavia on the article in the first number on the standardisation of recovery reports. It is clear from these that Dr. Rydzewski's efforts to increase international co-ordination have met with a large measure of support. P.A.D.H.

LETTERS

NEW SPECIES OF FUNGUS FOUND IN PUFFINS' BURROWS

SIRS,—I have recently discovered a new and very unusual species of fungus, which will shortly be described in the mycological press under the name of *Echinotrema clanculare*. This was found under tussocks of thrift (*Armeria maritima*) in association with the burrows of Puffins (*Fratercula arctica*) on Skokholm, Pembrokeshire. It is possible that there may be an ecological connection between this fungus and the birds. Since mycologists seldom, if ever, go collecting in Puffins' burrows, the new species may be less rare than it so far seems to be.

My fungus is found on the roofs of hollow places; it is whitish, soft and dry, and consists mainly of a mass of vertical, narrow, flattened plates a few millimetres wide by a centimetre or more high, hanging down and presenting a surface which when intact looks as if it were made up of innumerable, intricately sinuous pores. It smells of stale mushrooms.

I would be very glad to receive any specimens which might possibly fit this description at 20, Sedley-Taylor Road, Cambridge.

A. F. PARKER-RHODES

SIGHT RECOVERIES OF MARKED SWIFTS

SIRS,—We should be glad if any ornithologist seeing a Swift (*Apus apus*) with a daub of White, Yellow or Orange paint on the breast, belly, mantle, rump or carpal joints would note the colour and position of such a mark and inform us of the full particulars at 30, Stones Road, Epsom, Surrey.

MICHAEL J. CARTER, KEITH D. EDWARDS and TONY QUINN

NOTICE TO CONTRIBUTORS

British Birds publishes material dealing with original observations on the birds of Britain and Western Europe, or where appropriate, on birds of this area as observed in other parts of their range. Except for records of rarities, Papers and Notes are normally accepted only on condition that the material is not being offered to any other journal. Photographs (glossy prints showing good contrast) and sketches are welcomed. Proofs of all contributions accepted are sent to authors before publication. After publication 20 separates of Papers are sent free to authors; additional copies, for which a charge is made, can be provided if ordered when the proofs are returned.

Contributors are asked to observe the following points, attention to which saves the waste of much editorial time on trivial alterations:

1. Papers should be typewritten with double spacing, and on one side of the sheet only. Shorter contributions, if not typed, must be clearly written and with similar spacing. Failure to help in this way may result in delays to publication.

2. Notes should be worded as concisely as possible, and drawn up in the form in which they will be printed, with signature in block capitals and the writer's address clearly written on the same sheet. If more than one Note is submitted, each should be on a separate sheet, with signature and address repeated. In the case of rarity records, any supporting description which is too detailed for publication should be attached separately.

3. Certain conventions of style and lay-out are essential to preserve the uniformity of any publication. Authors of Papers in particular, especially of those containing Systematic Lists, Reference Lists, Tables, etc. should consult the ones in this issue as a guide to general presentation. English names of species should have capital initials for each word, except after a hyphen (e.g. Siberian Thrush, Yellow-headed Wagtail), but group terms should not (e.g. thrushes, wagtails). English names are those used in *The Handbook of British Birds*, with the exception of the changes listed in *British Birds* in 1953 (vol. xlv, pp. 2-3). The scientific name of each species should be given (in brackets and underlined) immediately after the first mention of the English name. Sub-specific names should not be used except where they are relevant to the discussion. It is sometimes more convenient to list scientific names in an appendix. Dates should take the form "1st January 1955" and no other, except in Tables where they may be abbreviated to "1st Jan.", "Jan. 1st", or even "Jan. 1", whichever most suits the lay-out of the Table concerned. It is particularly requested that authors should pay attention to Reference Lists, which otherwise cause much unnecessary work. These should take the following form:

TUCKER, B. W. (1949): "Species and subspecies: a review for general ornithologists." *Brit. Birds*, xlii: 129-134.

WITHERBY, H. F. (1894): *Forest Birds: Their Haunts and Habits*. London. p.434.

Various other conventions concerning references, including their use in the text, should be noted by consulting previous examples.

4. Tables should be numbered with Roman numerals, and the title typed above in the style used in this issue. The title and any headings within the Table should not be underlined, because this sometimes makes it difficult for the Editor to indicate the type to be used. It is most important that the lay-out of each Table should be carefully planned with an eye to its final appearance; above all, it should be borne in mind that Tables must either fit into the width of a page, or be designed to fit a whole page lengthways. All Tables should be self-explanatory.

5. Figures should be numbered with Arabic numerals, and the captions typed on a separate sheet. All line-drawings should be in Indian ink on good quality drawing paper (not of an absorbent nature) or, where necessary, on graph paper, but this must be light blue or very pale grey. It is best if maps, graphs, etc., are drawn twice the size of the final reproduction (ideally, therefore, for the normal 4" width the original should be 8" wide); sketches of birds, however, should be only slightly larger than the size at which it is intended they should appear. It is always most important to consider how each drawing will fit into the page. Unless the author has had considerable experience as a draughtsman, all lettering, figures, arrows, etc. should either be inserted lightly in pencil or else marked in position on a covering sheet of tracing paper. In maps it is often desirable to have a tinted (stippled etc.) area, and this should be indicated by a light-blue colour and left to the engravers.

Here is the story of the life of a young cuckoo which was hand-reared by Maxwell Knight from nestling to migration. He has made something of a speciality of rescuing young birds and bringing them up, but has strong views on the necessity of allowing birds to feed naturally and hunt for their own food. Besides giving a detailed account of the various stages of the cuckoo's growth and development the author provides much information about the feeding and upbringing of young birds in general.



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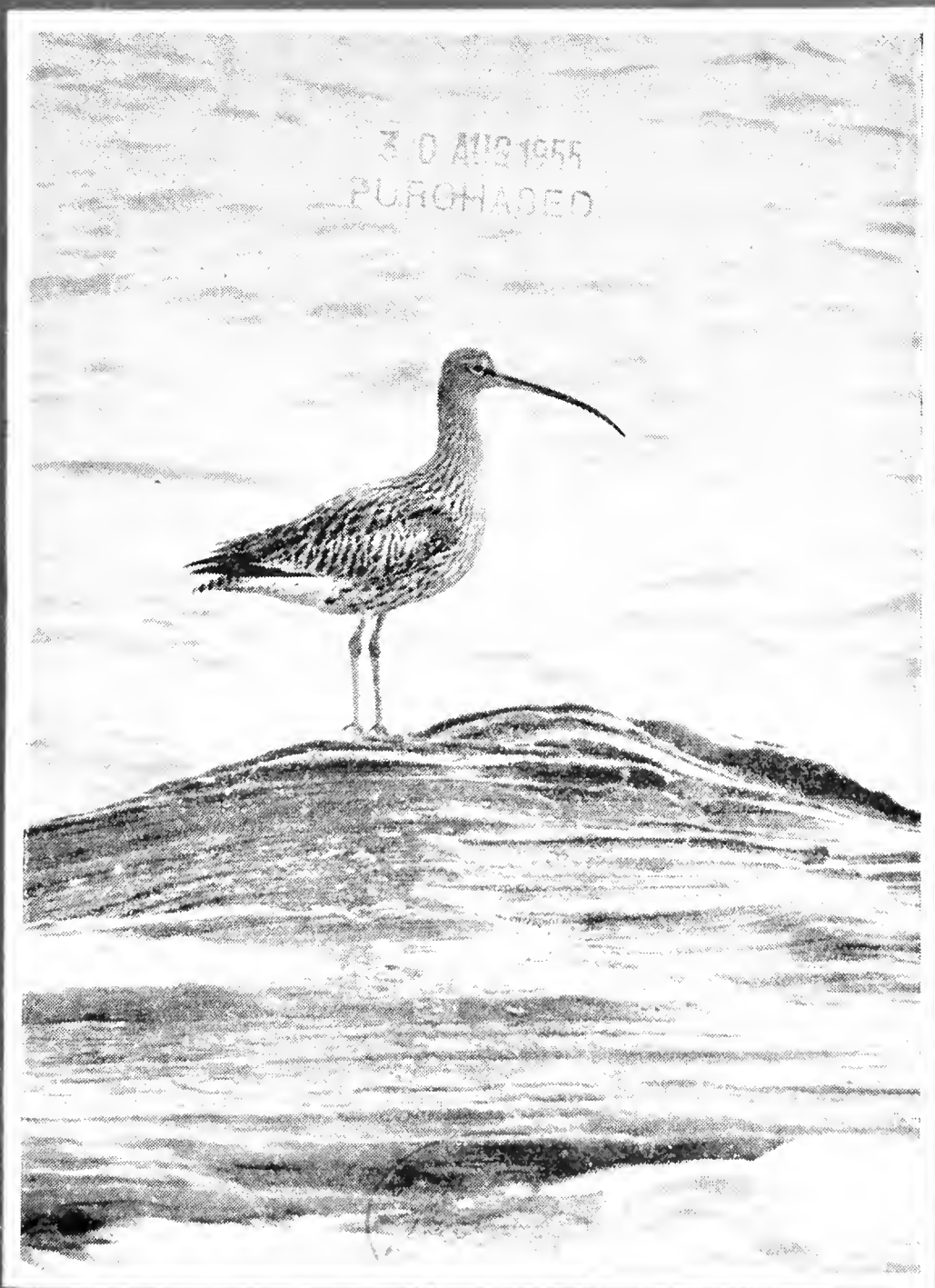
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BRITISH BIRDS



AUGUST 1955

THREE SHILLINGS

BRITISH BIRDS

AN ILLUSTRATED MONTHLY MAGAZINE

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Cover photograph by G. K. Yeates: Curlew (*Numenius arquata*).



BRITISH BIRDS

THE MIXING OF THE RACES OF THE YELLOW WAGTAIL IN KENYA

By D. I. M. WALLACE

INTRODUCTION

THERE is considerable controversy over the occurrence of certain east European and Asiatic races of the Yellow Wagtail (*Motacilla flava*) in Great Britain. Some ornithologists accept these records as examples of vagrancy while others claim some of the birds to be mutants of the local breeding race. The following notes on the Yellow Wagtail group on passage and in winter localities in East Africa may have some bearing on this problem.

My field observations on Palaearctic migrants made in Kenya from November 1952 to February 1954 showed that *flava* wagtails commonly combine in inter-racial groups on passage and in winter localities.

DIFFICULTIES OF RACIAL IDENTIFICATION IN THE FIELD

Flava wagtails are present in Kenya from September to April. During the first four months I found identification, even of the adult males on which I concentrated, almost impossible except between those of the yellow and dark-headed groups. By January birds in what seemed to be full plumage began to appear, until in March, when the movement north was at its peak, the majority were brilliant in fresh plumage. Especially when the birds were feeding with cattle, approach within a few yards was always possible.

The characters used to distinguish the various races in the field are given below.

M. f. flava (Blue-headed Wagtail), chin and eyestripe white, forehead and crown blue-grey, ear-coverts blue-grey, but generally darker than crown, mantle lighter than in other dark-headed races.

M. f. thunbergi (Grey-headed Wagtail), crown greyer and ear-coverts much darker than in *flava*, with increased contrast; only occasional suggestion of broken-white superciliary behind eye.

M. f. dombrowskii, generally as *thunbergi*, but with more distinct eye-stripe before and behind eye, variation in extent of white on chin, sometimes extending under ear-coverts. Call-note weak.

M. f. cinereocapilla (Ashy-headed Wagtail), as *thunbergi*, but chin and throat white and eye-stripe more distinct.

M. f. beema (Sykes's Wagtail), much paler on head than in *flava* (light crowns showing amid other darker-headed birds at fifty yards and more), superciliary not very obvious in the field, more white in ear-coverts making them paler in comparison with *flava*.

M. f. lutea (Kirghiz Steppes Yellow Wagtail), greater extent of yellow on head than in *flavissima*, crown and ear-coverts rarely showing any green in the field, yellow of forepart of head and under-parts faintly but distinctly tinged orange in many birds.

M. f. flavissima (British Yellow Wagtail), from *lutea* by distinct head-pattern and absence of orange "glow".

M. f. feldegg (Black-headed Wagtail), forehead, crown, ear-coverts and upper nape black, under-parts entirely yellow including chin. Call-note very strong and clear, distinguishable enough to attract one's attention to the bird in flight with other races.

There being little agreement so far on the systematic listing of the races of the Yellow Wagtail and as the *B.O.U. Check-list* is incomplete, I have followed that used by Meinertzhagen (1954), which includes all the races I saw.

COMPOSITION OF INTER-RACIAL FLOCKS

The following table gives the dates, localities and racial composition of all the flocks of which detailed examination was possible.

DATE	LOCALITY	Total No. of flock	<i>flava</i>	<i>thunbergi</i>	<i>dombrowskii</i>	<i>cinereocapilla</i>	<i>beema</i>	<i>lutea</i>	<i>flavissima</i>	<i>feldegg</i>
<i>1953</i>										
4th Jan.	Nanyuki	9	5					4		
25th	"	5	1	1				3		
27th	"	3	1					2		
31st	"	4	1					3		
24th Feb.	Naro Moru	c.100	12		24			4		
18th Mar.	Nanyuki	3	2					1		
31st	Meru	c.100	10	2			2 c.70	3	1	
12th Apr.	Timau	c.20	1	2				19		
13th	"	c.30	2	1				30		
17th	"	12						10		2
3rd Oct.	Lake Nakuru	c.40	2					38		
24th	" "	c.50	40	1				10		
25th	" "	c.50	40	1				10		
31st	" "	30	30							
29th Nov.	" "	c.50	50	1						
9th Dec.	" "	50	50							
10th	" "	50	50							
<i>1954</i>										
9th Jan.	Lake Nakuru	50	50							
16th	" "	c.100	60	5		1		2		
6th Feb.	Entebbe (Uganda) ...	c.50	40	2				5		5

It will be seen that no flock included above exceeded one hundred birds. This was true of all my observations, despite the heavy concentration of the birds in certain areas.

COMPARISON WITH OLDER RECORDS

Van Someren (1931) listed the following races of *Motacilla flava* as occurring in Kenya: *flavissima*, *campestris* (= *lutea*), *baema* (= *beema*), *flava*, *cinereicapilla*, *thunbergi*, *feldegg* and *leucocephala*. The above records include all these, except the last. In addition I am personally convinced that a group of twenty-four birds in the flock at Naro Moro on 24th February 1953 were *dombrowskii*, generally thought to be a *flava* × *feldegg* hybrid.

In 1952/54 the commonest races were *flava* and *lutea*. *Thunbergi* were seen frequently but in small numbers. The other races appeared only in big concentrations and during times of strong passage. These remarks are based on all my observations and not only on those included in the table.

DOES FLAVISSIMA REACH EAST AFRICA?

Different views have been expressed about the occurrence in East Africa of *flavissima*, whose main winter-quarters are in West Africa. Van Someren claims annual occurrence, with Kenya records from September to April, though birds were "mostly seen . . . January and February", which suggests a further influx at the end of the year. There are numerous sight records from Nyasaland and several specimens have been taken there. Meinertzhagen (1954) in his summary of the group's distribution, gives the winter range of *flavissima* as "West Africa, the Upper Nile Valley and south to Portuguese East Africa", a broad statement not easy to reconcile with the caution of other writers. Smith (1950) considered records of *flavissima* in East Africa likely to be attributable to confusion with *lutea*.

It will be seen that I have one definite record of birds that were apparently *flavissima*. There were three at Meru from 31st March to 4th April 1953. I think that it would be unwise to rule out the possibility of *flavissima* reaching East Africa. It is, however, known that autumn records in the Mediterranean are confined to the extreme west and there is no evidence of eastward movement to and down the Nile valley. To reach East Africa the birds are faced with a trans-continental journey from west to east. Is this more improbable than trans-atlantic drift? I suggest that the spring records of *flavissima* in Malta, Italy and Sicily may arise because birds of this race, which reach East Africa, go north with the races habitually wintering in that area, and by their route, correcting their direction on reaching eastern North Africa.

HABITAT PREFERENCE BETWEEN RACES

Motacilla flava is generally distributed in suitable localities

throughout Kenya, but the volume of my records allows no summary of general habitat preferences for the whole area. However, in the Rift Valley the race *lutea* showed a strikingly different habitat preference from the darker-headed races. Near Lake Nakuru, *flava* wagtails were always to be found in the marshes and lagoons of the lake itself, on the cattle-grazed plains near-by and on the playing fields of an army camp four miles away. At the lake, save for a few *lutea* in early autumn, all adult birds that could be determined were of the races *flava*, *thunbergi* and *cinereocapilla*. On the plains, an area with little standing water, birds present were almost equally divided between *flava* and *lutea* with the latter slightly more common. Wagtails observed on the dry playing fields were without exception *lutea*. This suggests that *lutea* is less dependent on water and such a view is borne out to some extent because during the northward passage of these birds in March and April 1953, in the drier areas to the north-west and north of Mt. Kenya, *lutea* was the dominant race, while in the wetter areas to the south and east of the mountain the darker-headed races at times out-numbered *lutea*.

SUMMARY

1. The paper contains some observations on the Yellow Wagtail (*Motacilla flava*) taken from records made in Kenya Colony from November 1952 to February 1954, which show the sub-specific integration on passage and in winter localities.
2. The characters used to distinguish the various races of *Motacilla flava* in the field are described.
3. Records of all inter-racial flocks studied in detail are given in tabulated form.
4. A brief comparison with older records is made, with notes on the present relative abundance of the various races.
5. The possibility of the British breeding race occurring in Kenya is reviewed.
6. Mention is made of habitat preferences between the darker-headed races and *lutea*.

REFERENCES

- BENSON, C. W. (1953): *Check List of the Birds of Nyasaland*.
MEINERTZHAGEN, R. (1954): *Birds of Arabia*. Edinburgh.
RAMSAY, WARDLAW (1923): *Birds of Europe and North Africa*. London and Edinburgh.
ROBERTS, A. (1940): *The Birds of South Africa*. London and South Africa.
SMITH, STUART (1950): *The Yellow Wagtail*. London.
VAN SOMEREN, V. G. L. (1931): "Catalogue of the European and Asiatic migrants to Kenya and Uganda . . ." *Journ. E. Africa and Uganda Nat. Hist. Soc. Special Supp.* 4: 27-28.
WITHERBY, H. F. *et al.* (1940): *The Handbook of British Birds*. Vol. I, pp. 212-222. London.

BLACK DUCK IN CO. KILKENNY: A BIRD NEW TO IRELAND AND BRITAIN

By P. G. KENNEDY, S.J.

ON 12th February 1954 a duck, which had been forwarded by Mr. Frank Hudson, Carriganore, Waterford, was received at the National Museum of Ireland, Dublin. Mr. P. E. Dunn and I identified it as a Black Duck (*Anas rubripes*), a native of eastern North America and a species hitherto not recorded in Europe. Owing to its condition the taxidermist was unable to sex it, but the skin was sent to Mr. Peter Scott, who confirmed the identification and stated that it was an adult female.

The credit for this addition to our list of birds goes to Mr. Hudson. On a visit to the poulterer's shop of Messrs. M. J. Flanagan, 18 Broad St., Waterford, he noticed the unusual plumage of this supposed "Mallard", and wishing to purchase it he was told that it had already been sold to a customer. However, an interchange was made and he secured the duck for presentation to the Museum. He was informed that the bird had been shot by a farmer named Croke, who lives at Listrolin, a village about three miles west of Mullinavat, Co. Kilkenny. From an examination of the shop register he found that the duck was received on 5th February 1954 from Croke himself by Harry London, an assistant in the shop. London, who has had many years' experience in handling wildfowl, realized that this duck was not an ordinary "Mallard" and pointed out the fact to Croke.

Mr. Hudson also paid a visit to Croke in Listrolin and was shown the marsh, adjoining a stream, where the duck had been shot. Croke informed him that two ducks, which he considered to be of the same colour, rose together from the marsh and that he brought down both, but one was only winged and escaped in the stream.

As the Black Duck is not found in our handbooks, a brief description may be of interest. It is of the same size as the Mallard, and is not unlike a female Mallard, but it is darker. The name "Black Duck" is less appropriate than "Dusky Duck", another but infrequently used name, for it is not black like a Common Scoter (*Melanitta nigra*), but dusky brown above and paler below. Two outstanding and diagnostic features of this otherwise drab duck are the speculum, which is purplish blue framed in velvety black, without any visible white, and the under-surface of the wing, which is white. The crown is blackish with pale brown streaks; the neck, lighter than the crown, is greyish-brown with dark streaking; the back is dusky with lighter edging to the feathers; the bill is olive and the feet orange-red with dusky webs.

[Photographs of Black Duck, taken in America by Roger Tory Peterson, appear on plates 45 and 46.—Eds.]

NOTES ON THE BLACK DUCK

By PETER SCOTT

THE chances of the Black Duck (*Anas rubripes*) shot in Ireland on 5th February 1954 having escaped from captivity may be regarded as negligible. Very few are kept in waterfowl collections, and although they have been bred at Slimbridge, Gloucestershire, the young have always been permanently pinioned; no record can be traced of any offspring of these birds having been allowed to fly or of any other source of full-winged Black Ducks in Europe.

The Black Duck breeds in north-eastern North America from Labrador south to N. Carolina and west to the Great Lakes. Its breeding-range takes in James Bay at the southern end of Hudson's Bay.

After the breeding-season many move further north and further west greatly extending the range of the species, but at the limit of the southward migration the Black Ducks are concentrated into a much smaller area bounded by the east coast from Nova Scotia to Florida, the Gulf Coast and the lower half of the Mississippi basin. There is some evidence that the range has recently been extending westward.

The Black Duck is held to be a distinct species from the Mallard (*A. platyrhynchos*) because the breeding-ranges of the two forms overlap, and although hybridization between the two has been frequently recorded, no large hybrid population has developed. Nevertheless, the two must be very closely related and the Black Duck may be regarded as the representative of the Mallard in eastern North America. It has been stated that the arrival of Mallards in the Black Ducks' area may be comparatively recent and partly assisted by man.

Supposed local races have been separated in the past, but these are not now generally accepted, the differences being attributed to different sex and age groups, and to individual variation. (The Florida, and Mexican Ducks are now regarded as subspecies of *platyrhynchos*—*A. p. fulvigula* and *A. p. diazi*.)

Over its range the Black Duck is the most sought-after of the sporting ducks. Its extreme wariness is proverbial. It is rather rarely found in large flocks, but is very widely spread on both fresh water and on the coast. Although its food is mostly vegetable, some birds have been found with stomachs containing nothing but animal matter—amphipods and molluscs.

It is common in parks in many cities in the eastern United States—including New York—and is also found round many harbours. Like the Mallard it soon becomes tame when not persecuted.

REFERENCES

- WRIGHT, BRUCE S. (1954): *High Tide and East Wind*. Harrisburg, Pennsylvania.
KORTRIGHT, FRANCIS H. (1942): *The Ducks, Geese and Swans of North America*. Washington, D.C.

SPECIAL REVIEW

By D. D. HARBER

THE BIRDS OF THE SOVIET UNION. Under the general editorship of G. P. DEMENTIEV and N. A. GLADKOV. (*State Publishers "Soviet Science", Moscow, 1951-54*). 6 vols. (In Russian).

CONTENTS OF VOLUME 3 (1951: 680 pages)*

(Part II)

THE Lariformes are considered a separate order by the Russians and are dealt with by G. P. Dementiev. On the one hand, he writes, they approach the waders and on the other the auks. But "the common morphological characteristics are not numerous and the biological differences are very considerable. Therefore the Charadriiformes of the old (and of some new) authors, where auks, gulls and waders are united in a single order, are a mixed group. The probability of a common origin is of course not enough to permit these biologically different birds to be attributed to one order." The wide-spread opinion that birds of this order are harmful because they feed on fish cannot be considered correct. Most commonly they take fish which is dead or dying and only a small percentage of fish which is useful to Man. Moreover the larger birds of this order destroy obnoxious rodents and the value of gulls and terns in destroying insect pests is recognised in "all the most recent investigations".

The Great Skua (*Stercorarius skua*) is a rare bird in the Soviet Union, being occasionally recorded between the Murman coast and Novaya Zemlya. There are old records for the Kiev district about which the writer is somewhat doubtful. The Pomarine Skua (*S. pomarinus*) has occurred on a number of occasions on migration in the interior of the Soviet Union. Visits to the Black Sea and the Caspian "are probable but in fact remain unproved". The Arctic Skua (*S. parasiticus*) breeds as far south as Kamchatka. Breeding on the New Siberian Islands cannot yet be regarded as certain. While it outnumbers the Pomarine Skua in Europe it is outnumbered by it in Siberia. The Long-tailed Skua (*S. longicaudus*) does not normally nest on Spitsbergen or on Jan Mayen. Details are given of seasonal variations of the food of this and the last species. The race *pallescens* of the Long-

* Discussions of the contents of volumes 1 and 2 appeared in previous issues on pages 221-224 and 268-276. The first part of volume 3 was described on pages 313-319.

tailed Skua (given as doubtful by *The Handbook*) is recognized and is stated to breed eastwards from the lower reaches of the Kolyma. Birds from the New Siberian Islands and the lower Indigirka are transitional in type.

The Ivory Gull (*Pagophila eburnea*) probably nests at about lat. 75° N. on Novaya Zemlya, but the actual site has not yet been found. It nests on Lone Island (Einsamkeit), on Severnaya Zemlya and perhaps on Bennett, Herald and Polynia. There does not seem to be any fresh information on nesting on these last three islands since M'Clintock wrote in 1856. On rare occasions stragglers are found in the interior of the Soviet Union. Its incubation period is given as a little less than a month. On Novaya Zemlya it has been observed to attack young auks (Gorbunov, 1929). The breeding of the Kittiwake (*Rissa tridactyla*) on Vaigach (Waigatz), given as doubtful in *The Handbook*, is confirmed. There are a number of records of this species for the interior of the country. The largest colony of the typical form (off the Murman coast) has rather more than 6,000 pairs. Its incubation period is stated to be 24-25 days. The range of the eastern race *pollicaris* is not fully known, but it is believed not to nest on Wrangel and Herald Islands.

It is stated that recent investigations have added little to the information on the distribution of Ross's Gull (*Rhodostethia rosea*) obtained by Buturlin in 1905. It may perhaps nest at the mouth of the Yana and on the lower Khroma. It may extend about 100 miles east of the mouth of the Kolyma. There are indications that in years of severe flooding this bird may not nest at all and this may explain its early appearance at times in the north. Four eggs (one of them infertile) were once found in a nest. Its incubation period is rather more than three weeks. It apparently winters in those parts of the Arctic Ocean free from ice. Since 1949 this species has been put on the list of completely protected birds in Yakutia. Sabine's Gull (*Xema sabini*) nests on Wrangel Island (not given in *The Handbook*). It is very rare in the interior. It is suggested that this bird probably winters in the ice-free parts of the northern seas. Flocking and the desertion of nesting localities begins very early; Torgashev saw a flock of 120-150 on 15th July on the lower Khatanga. It is a rare bird in the Palearctic.

Apart from a few in Esthonia, the Great Black-backed Gull (*Larus marinus*) nests only on the Murman coast and its islands in the Soviet Union. "Statements as to its nesting on Kanin, on Vaigach, on the lower Pechora (Pleske, 1928) are not confirmed and all information about encountering the Great Black-backed Gull both here and on the coasts of Siberia is founded on confusion with other species." Its incubation period is given as 29-30 days. The Lesser Black-backed Gull (*L. fuscus*) does not nest on the

eastern Murman coast nor on most of the White Sea coast. It regularly winters in the Black Sea.

The Great Black-headed Gull (*L. ichthyæetus*) breeds in the Crimea; at the delta of the Volga and in an area to the west of this river but not further north than Stalingrad (Kalmuck Steppe); in North Kazakhstan (Kirghiz Steppes) about as far as lat. 50° N.; round the north, east and south shores of the Caspian; on the Aral Sea; on Lake Teli-kul; on the lower Syr-Daria (episodically); apparently eastern Pamirs; Balkash; Ala-kul; Sassyk-kul; Issyk-kul; Zaisan; sporadically on the large lakes of north-west Mongolia and south Altai. There is also an isolated colony on Lake Chany in the Baraba Steppe and there is possibly one on Lake Sevan in Armenia. In the Soviet Union it winters on the south Caspian, on the upper Amu-Daria (apparently) and in the Crimea (occasionally). It is common on the islands of the Caspian and Aral Seas. On Komsomol Island in the former up to 3,000 birds were counted in 1948. In the Syr-Daria delta the first eggs are laid at the beginning of April. There appears to be still no information regarding incubation and fledging periods. Among the items of food listed are the eggs and young of other birds and rodents.

The race *sibiricus* of the Black-headed Gull (*L. ridibundus*) is not recognized and thus the typical race is given as breeding as far east as Kamchatka and Sakhalin. This species is considered to be very valuable to agriculture by eating rodents and insects, and regret is expressed that so many birds bred in the Soviet Union fall victims to gunners while wintering or on passage in western and southern Europe. The race *relictus* of the Mediterranean Black-headed Gull (*L. melanocephalus*) is rejected. It is considered possible that the single specimen from which this race is described is in fact an aberrant example of *L. brunneicephalus*, particularly since no one has since been able to find another in Mongolia which country has been "sufficiently well investigated ornithologically". There are still no details known of the incubation and fledging periods of the Mediterranean Black-headed Gull.

The Little Gull (*L. minutus*) normally breeds only as far south as the Volga-Ural Steppes apart from sporadic breeding in the Crimea, the Sea of Azov and Lake Sevan in Armenia. There is an isolated colony in Volhynia. It does not nest in Central Asia but does so as far east as Lake Zaisan. Then there is a gap and breeding begins again a little to the west of Lake Baikal. It is not clear how far east its range extends from there, but it is doubtful if it reaches the sea of Okhotsk. On the whole its numbers are only moderate and its colonies are not of large size. Its incubation-period is given as 23 days (quoted from Tischler, 1941) and the young fly when 21-24 days old.

The White-winged Black Tern (*Chlidonias leucopterus*) possibly nests in the Novgorod district. This is given as certain in *The Handbook*. There is a gap in its distribution in central Siberia between the upper Ob and the east of Lake Baikal. Outside the Soviet Union it is found in an isolated area of north-west Mongolia. From Transbaikalia it nests to the Pacific coast and south Sakhalin. Since the time of Pallas there seems to be no evidence that it is to be found on Kamchatka. Its southern limit in central Kazakhstan is not clear and it is not certain whether it breeds on the Syr-Daria and the Amu-Daria. It is abundant in northern Kazakhstan, the Kulunda and Baraba Steppes but sporadic and scarce on the Black Sea. Apparently nothing is known about its incubation and fledging periods. Apart from insects it has been known to eat (more rarely) small fish, frogs, tadpoles, worms and spiders. The Whiskered Tern (*C. hybrida*) is said to nest in Bessarabia and Podolia on the basis of old information "which requires confirmation". In Soviet Asia it does not nest further east than the Syr-Daria and the Amu-Daria. The statements of Sushkin as to nesting in the Zaisan area were probably based on birds of passage. Only in Turkmenia can this species be considered not only common but abundant. There is a colony of several hundred pairs in the Astrakhan sanctuary. Incubation lasts not less than 18 days and the young fly when about 21 days old.

The Black Tern (*C. niger*) does not breed on the Ust Yurt or on the Mangyshlak Peninsula. It is only numerous in the south of European Russia, in north-west Kazakhstan, and in south-west Siberia. It "undoubtedly has a positive significance for agriculture by destroying harmful insects. It is hardly possible to consider that it does any concrete harm to fisheries". The Caspian Tern (*Hydroprogne caspia*) nests as far east as Lake Zaisan in central Siberia and there is a colony on Lake Uryug-nor in north-west Mongolia. Otherwise there are no more until the Far East where breeding takes place in Ussuria. It is common on the Caspian Sea and in places on the Aral Sea and in east Kazakhstan. In the Crimea and in Esthonia there are only a few. In the Black Sea area two eggs are normally laid (*The Handbook* quotes three as being usual in this area). In parts of central Asia it appears to lay during the first half of May.

The Gull-billed Tern (*Gelochelidon nilotica*) nests as far east as Lake Zaisan in Siberia and there is "apparently" an isolated colony in south-east Transbaikalia. While it is usually a bird of the plains it nests by mountain lakes up to about 6,500 feet in Armenia. It does not form big colonies: in north-west Kazakhstan its colonies contain up to 150 pairs and on the Aral Sea up to 300. It can be regarded as common in central Asia. There is no evidence for any decrease in numbers during the last century such as has taken place in western Europe. It normally lays three

eggs "but sometimes several females lay in one nest; then there are 5, 6 and even 17 (*sic*) eggs in a nest".

The Sandwich Tern (*Sterna sandvicensis*) is a rare bird in the Soviet Union and there are considerable colonies only on the north shore of the Black Sea though there are lesser colonies on the Caspian. Four races of the Common Tern (*S. hirundo*) are recognized. The typical race breeds as far east as the Yenesei and the borders of Altai. So far as has been ascertained by ringing it winters in Africa. In places (Kirghisia and Armenia) it nests at a height of about 6,500 feet. It is numerous in the plains of central Asia, in north-west Kazakhstan and south-west Siberia and in many localities in the south of the European part of the Soviet Union. The race *minussensis* breeds from south-east Altai to Transbaikalia, extending into Mongolia. The race *tibetana* is found in the Soviet Union in the eastern Pamirs. The race *mongipennis* (which has a completely black bill) breeds from the eastern limits of *minussensis* to the Anadyr (though not to the coast there), Kamchatka, the Amur and Sakhalin. An unfortunate error has been made on the map showing the distribution of these races. These are numbered from 1 to 4 but no 4 appears on the map. There are, however, two 3s and one of these should be 4. The Arctic Tern (*S. macrura*) nests along the whole northern coast of Siberia and on the northern shores of the Sea of Okhotsk. Apparently it does not nest on either Kolguev or Kamchatka. The southern limit of its range more or less coincides with that of the tundra though it penetrates further south along large rivers. It appears that after the end of the breeding-season the birds from both the European and Asiatic parts of the Soviet Union first fly north to the shores of the Arctic Ocean and then turn west and make for the Atlantic. There are very few records for the interior.

The Little Tern (*S. albifrons*) is common in parts of central Asia where the largest colonies (up to 50 pairs) appear to be on the Aral Sea. It is rare in the centre of European Russia and in western Siberia. The race *sinensis* nests in the Soviet Union in Ussuria. The race *saundersi* (which is regarded as a separate species by the author) has been claimed in the past for various parts of Asiatic Russia, but these claims are considered to relate to aberrant specimens of *S. a. albifrons*.

The Ralliformes are by E. P. Spangenberg. The Coot (*Fulica atra*) winters in huge numbers in the Caspian and in parts of central Asia. Many perish in unusually severe winters, falling victims to jackals and birds of prey. Many are obtained for food and in Azerbaijan this species provides 80% of the total winter catch of birds while much the same is the case in Turkmenia. The flesh of the Coot in winter is said to be "of high quality and is distinguished by exceptionally large layers of fat". But in

summer it is of little value. The Moorhen (*Gallinula chloropus*) breeds as far east as south-west Altai and also in Ussuria, but in the area between its status seems uncertain though it has been reported as breeding in south-west Transbaikalia. Its northern limit is not fully known. As a breeding species it is particularly numerous in the Ukraine and in Transcaucasia. Large numbers winter in the last locality and some in central Asia.

The Water Rail (*Rallus aquaticus*) winters in the Crimea and the northern Caucasia and ("in huge numbers") in Transcaucasia. Many perish in snowy winters, not so much from cold or from lack of food as from predators. As a breeding species it is only reported as numerous from a few localities, e.g. in the Pinsk marshes, in places in the Dniepropetrovsk and Chkvalov districts. The Corn-crake (*Crex crex*) "is almost everywhere common or even abundant where suitable habitats are available. It is relatively rare at the limits of its area and is not numerous in the Semirechinsk district. The total number of birds in the U.S.S.R. is enormous". It seems to be absent from the area between the Caspian and Lake Balkash, apart from the Semirechinsk district. In places (the Crimea) it is highly esteemed as a game bird when on passage.

The Little Crake (*Porzana parva*) has bred as far north as Rybinsk (1950) but this appears to be exceptional. It is rare in the north and east of its area but common and even abundant in the south, e.g. Armenia, many parts of the Ukraine, northern Kazakhstan and the Chkvalov district. Its total numbers are "very considerable". The eggs are laid at 24-hourly intervals. Both sexes incubate but mainly the female. Incubation apparently begins about halfway through the laying and lasts 20-21 days. The race *illustris* is rejected. The Spotted Crake (*P. porzana*) is common in parts of the mountains of Transcaucasia (though not numerous in the lowlands there) and is abundant throughout the whole of the southern, middle and, in places, northern zones of the Soviet Union. It does not require such moist localities as the Little Crake and Baillon's Crake and is "quite content with damp, grassy meadows with small expanses of open water". Apparently two broods are raised annually. According to the observations of the author, incubation lasts 20 days. The young fly when 7 or 8 weeks old. The northern limit of the range of the typical race of Baillon's Crake (*P. pusilla*) in the European part of the Soviet Union seems to be Smolensk, Tambov, Gorki, Ulianovsk, Ufa. In Asia its range appears to extend through southern Siberia and central Asia to the Far East. On the whole it is more abundant than the Little Crake but considerably less so than the Spotted Crake.

FIELD-NOTES ON SOME ASIAN LEAF-WARBLERS—II

By H. G. ALEXANDER

THE first part of this paper (*antea*, pp. 293-299) dealt with those leaf-warblers or willow warblers (*Phylloscopus*) which are distinguished by their pale wing-bars; in this second part I turn to those species that have no wing-bar and add notes on some very similar warblers belonging to other genera—*Hippolais*, *Locustella* and *Acrocephalus*. We are here dealing with one of the most difficult groups of birds, from the point of view of field-identification: little brown warblers with no obvious plumage distinctions. They can be confusing enough in the hand. When, far from coming to hand, they skulk about in cover, never resting in one position in full view for a moment, they can be not only difficult, but often literally impossible to identify. There are, of course, slight plumage differences; but in most cases the more important diagnostic features may be the colour or shape of the bill or legs; or, where the closely related genera are concerned, the shape of tail or wings. Behaviour and call-notes are also important.

LEAF-WARBLERS WITH NO WING-BARS

The main purpose of this article is to suggest points of field-identification for the less-known species, including some not yet recorded from western Europe; but it may be useful to begin with some reference to the familiar British species. Those who have spent a life-time among Chiffchaffs (*Phylloscopus collybita*) and Willow Warblers (*Ph. trochilus*) will, I think, be the first to agree that, except when they are singing, it is often hard, sometimes impossible, to distinguish these two species satisfactorily in the field. Birds with really pale legs must be Willow Warblers; but P. J. Conder and Joan Keighley (*antea*, vol. xliii, pp. 238-240) have shown from birds handled at Skokholm, that in some months of the year a small proportion of Willow Warblers have legs as dark as any Chiffchaff. In plumage there is a good deal of variation in both species. Incidentally, it may be well to remember that in all probability there is similar seasonal and individual variation within some of the "rare" species, which, because of their distribution, have been watched much less by ornithologists than our two common breeding species.

In autumn, some Willow Warblers (juvenile birds) are almost primrose yellow on the under-parts; at the other extreme, some Chiffchaffs, especially immigrants of the northern races, are without any yellow. Such individuals can be safely assigned to the respective species. Others cannot. Reference may here be made to earlier discussions of the subspecies of the Chiffchaff in *Brit-*

ish Birds (vol. xlv, pp. 94, 358*; also vol. x, p. 263 and vol xi, p. 215).

Next, there is the Wood Warbler (*Ph. sibilatrix*). A *Phylloscopus* with yellowish-green mantle, yellow throat and pure-white under-parts is a Wood Warbler. If it lacks this combination of colours, it is not a Wood Warbler. The unusually long wing helps to emphasise the fact that it is slightly larger than the Willow Warbler. Very yellow immature Willow Warblers in autumn can be mistaken for Wood Warblers; but they are never green on the mantle or white on the lower breast and flanks and belly. Wood Warblers always are.

Bonelli's Warbler (*Ph. bonelli*) has only very recently found its way into the British list. But its breeding-range now extends so near to Britain that its visits may be expected to increase in number. In size and shape it is not unlike the Wood Warbler, but the plumage is normally very different. The whole of the upper-parts, apart from the yellowish rump, are plain grey-brown; the under-parts are dull white and this colour is less clear than in the Wood Warbler, while Bonelli's also lacks the yellow of the throat. The yellow rump can sometimes be a useful additional field character for Bonelli's, but it is not always obvious, and it should not be relied on to the exclusion of other characters. I spent some time watching Bonelli's at elose quarters in Switzerland in June 1954, and I noticed that when the wing-quills are viewed from a position almost at the level of the observer they can look yellowish-brown. This is a point worth remembering in connection with other species; namely that, whilst the upper-parts often appear a nearly uniform colour when seen from above, a level view of the wing emphasizes the difference in tone which often exists between the edges of the wing-quills and the predominant colour of the mantle.

Here is another recent experience which may underline the need for caution in identifying these species. Two weeks after the observations on Bonelli's just recorded, I was in a copse in south Worcestershire and came upon a couple of *Phylloscopi* apparently concerned about their nest or young. Both were silent. One I saw within a few yards. Its mantle was very brown (olive-brown perhaps); under-parts dirty-white, with scarcely a trace of buff or yellow; and as it flew from me I noticed that its rump was paler than the back or tail. If I had seen this pair in Switzer-

* Since my letter to *British Birds* on this subject I have had many further opportunities of hearing the spring song of the Siberian Chiffchaff (*Ph. c. tristis*); I have also learned that this song is familiar to other Indian ornithologists. It may be heard from mid-February to the time of the departure of the birds for the north in late April. This is clearly the same song which Seebohm heard on the breeding grounds and described fully (cf. H. E. Dresser, *A History of the Birds of Europe*, Vol. I, p. 451). It is almost certain, therefore, that the common Chiffchaff song, heard from time to time by various observers in spring in Western India (cf. *The Handbook*, Vol. II, p. 7) must refer to individuals of the race *Ph. c. sindianus*.

land, I might have been inclined to call them Bonelli's, yet in fact they were not even Chiffchaffs. They were Willow Warblers. Like most *Phylloscopi*, Bonelli's has a pale superciliary stripe; but it is less pronounced than in the species about to be described.

In addition to these four west European breeding-species, two brown leaf-warblers without wing-bars have occurred in Britain, namely the Dusky (*Ph. fuscatus*) and Radde's Warblers (*Ph. schwarzi*). The former is not known to breed anywhere west of the Ob river in Siberia; the latter is an even more easterly species, breeding all across central eastern Asia, but not west of the Yenesei river and the Altai mountains. The former has been recorded in Orkney, Sussex and Heligoland; the latter in Lincolnshire and Heligoland. Three other brown leaf-warblers, inhabitants of east or central Asia, seem to be worth mentioning, though none of them has yet been recorded from Europe. These are Tiekell's Warbler (*Ph. affinis*), the Greyish Warbler (*Ph. griseolus*), and the Streaked Willow Warbler (*Ph. armandii*).

The Dusky Warbler is a bird that I have watched frequently in its winter-quarters in east Pakistan and elsewhere. After some concentrated observation on several birds in January 1953, I wrote:

"Plumage: Upper-parts fairly warm grey-brown, darkest on head, wings and tail. In one bird it seemed that there was a half-collar of buff on the neck. Conspicuous, pale, superciliary stripe above dark brown line from bill through eye. Under-parts pale grey, tinged with buff, sides warm buff (but variable). Legs brown."

I do not understand the statement in several authoritative books that the superciliary stripe is rusty; it might be described as buff, but certainly no brighter colour than that. Here are some further quotations from my notes:—

"Habits: Keeping close to the ground, sometimes skulking hidden among roots, etc., at other times coming into the open. The first I saw seemed rather wild, others very tame, sometimes too near for focus. (In a garden in Calcutta I have watched one hopping from plant to plant in a flower-bed and passing almost within hand-reach of two interested spectators). The phylloscopine flicking of wings and tail (especially tail) was incessant. The tail is square, less forked than in, for example, Siberian Chiffchaff. In one case, two Siberian Chiffchaffs were in low trees above a Dusky Warbler. They were more sprightly, the beak more slender, the plumage paler and duller."

The call-note of *Ph. fuscatus* is of the "*Sylvia*" type; but if the Lesser Whitethroat's (*S. curruca*) call-note be described as "tehak, tchak", then the Dusky Warbler's note is "taek" or "tek". In other words, it is a shade softer.

To summarize, the Dusky Warbler is a darker and warmer brown than any common British species, its call-note suggests a *Sylvia*, it usually keeps near (rather than on) the ground, it is not shy. Whether this last character would be good for stray migrants I cannot say. Their behaviour is apt to be unpredictable.

Radde's Warbler I have never seen, so I can only summarize the impressions I get from studying Ticehurst's monograph. It must be difficult to distinguish in the field from the Dusky Warbler except under very favourable conditions. The chief distinctive characters appear to be: upper-parts not so dark brown; under-parts tinged with yellow or cream (apart from the flanks, which are buff as in *fuscatus*); legs paler than in *fuscatus*, probably as in typical Willow Warbler; bill shorter than in any other species of *Phylloscopus*; note "twit-twit".

The Streaked Willow Warbler is a similar species; it breeds in north China and adjacent countries. It is not known to have travelled westwards. The upper-parts are very similar to those of the Dusky Warbler, but the under-parts, apart from a pale throat, are yellow with darker yellow streaks.

A very distinct species, the Greyish Warbler, has uniform grey-brown upper-parts, and oily yellow under-parts and supercilium. It commonly hops about on the ground, and in its winter-quarters, and on migration, loves to hop around the boles of large trees, like a Great Tit (*Parus major*). It has a curious call-note, which sounds to my ear like a drip of occasional drops of water onto hard soil: "quett" I have called it. I once caught one fluttering against a window, and noted that the upper mandible was dark brown, lower mandible buffy-yellow, legs pale brown, soles paler. The eye was black.

Tickell's Warbler is dark olive-green above, and bright yellow below. Observers of young Willow Warblers in autumn might bear this species in mind—but let them not forget the dark olive mantle. The supercilium is also bright yellow. The young are browner than the adult. The legs are pale.

SIMILAR WARBLERS OF OTHER GENERA

I now pass to the genus *Hippolais*. The two species that are most familiar in western Europe, namely Icterine and Melodious (*H. icterina* and *H. polyglotta*) need not detain us. Both are yellowish on the under-parts, and need to be distinguished from juvenile Willow Warblers. The bill is broader and can look almost uptilted—a character that is useful in other members of the genus. The high forehead, well shown in R. T. Peterson's illustrations to *A Field Guide to the Birds of Britain and Europe*, is also a good point for distinguishing *Hippolais* as a genus from *Phylloscopus*.

There are several brown species of *Hippolais*, birds that lack the yellow under-parts. Two of these are on the British list, namely the Olivaceous Warbler (*H. pallida*) and the Booted Warb-

ler (*H. caligata*). The latter is a common winter-visitor to parts of India, and I have had opportunities of watching it at close quarters many times, and of comparing it with the Siberian Chiffchaff and with two species of *Acrocephalus*. I have also been able to make mental comparison with the Dusky Warbler, by watching both within a few days of each other. Their normal winter-ranges hardly overlap.

The following seem to be the main field-characters for separating brown *Hippolais* from brown *Phylloscopi*:—(1) High forehead, as already noted. (2) The bill tends to look slightly up-tilted, as already noted. (3) The tail is square, or even slightly rounded, whereas in nearly all *Phylloscopi* known to me it normally appears somewhat forked. (4) *Hippolais* are apt to flick their wings and tail, but not as persistently as *Phylloscopi*. What this really amounts to is that wing- and tail-flicking cannot be considered diagnostic of *Phylloscopi*. (5) The pale superciliary streak, though usually visible, is far less marked than in any *Phylloscopus* known to me. (6) In most individuals of the Booted Warbler the feathers of the crown look darker than the rest of the mantle, which is a uniform pale, almost sandy brown. This, however, may well be a character only applicable to this one species, possibly even only to one subspecies of *H. caligata*. (7) Finally, the call-note. The following observations made on 8th December 1953, which confirm in detail similar observations made on other occasions, may be worth quoting:

“The Dusky Warbler has a rather soft “tschek, tsehek” or “tak, tak” note, repeated singly with intervals, very uniform in tone; decidedly soft for this type of note. *Hippolais* is much more variable; it is typically “tschuk, tsehuk”, or “tschak”, almost as harsh as the note of Blyth’s Reed Warbler (*Acrocephalus dumetorum*); but once to-day I heard one calling as softly as any Dusky Warbler, but before long it quickened the pace and loudened the note, so as to be typical *Hippolais*. This rapid repetition of notes seems to me to be quite distinct from the Dusky.”

The juvenile of the Booted Warbler has a rather distinct plumage which can cause some confusion. In early October 1953, near Delhi, I found a small party of warblers, presumably on passage, in a patch of tall weeds. They were extremely skulking, which *Hippolais*, in my experience, usually is not. I spent a full quarter of an hour among them, and got some very close views, and was completely perplexed. I took them to be either some *Locustella*, because of their skulking habits and rounded tails, or possibly Paddyfield Warblers (*A. agricola*). Finally, however, I satisfied myself that they were juvenile Booted Warblers. Here is the description, written down before I was satisfied as to their identity:

“The bird I saw best was dark brown above, with a slight

but distinct pale superciliary. Tail slightly rufous-brown, the tips (only just the very tips) pale, not pure white. Tail short and round. Under-parts buffy-brown, unstreaked, white on the abdomen."

Presumably this, to me, unusual and confusing plumage, is the plumage in which a visitor to Britain would be most likely to appear. I should add a word about the pale tips to the tail. This feature is given by H. Whistler and others as a valuable field-character, and a good way of distinguishing the Booted Warbler from other brown *Hippolais*. So it undoubtedly is when it is visible, but, in my experience, birds seen at very close quarters, in excellent light, often do not show it at all. Probably it is more often visible in fresh plumage than when the plumage is worn. H. F. Witherby in *The Handbook* says that the tail-feathers do not appear to be moulted when the body-feathers moult in the first months of the year. My impression, however, is that I have noticed the whitish tips to the tail-feathers more often when the birds appear in gardens in Delhi on the spring migration than when I have seen them in their winter-quarters. One must conclude, I think, that the pale tips to the tail form a useful, but undependable, feature for distinguishing *H. caligata* from other brown species of *Hippolais*. I know of no other reliable field-character.

Of the genus *Acrocephalus*, both Blyth's Reed Warbler (*A. dumetorum*) and the Paddyfield Warbler (*A. agricola*) are common species in India in winter. The former is rarely found in reed-beds or swampy places. Both in its winter haunts and on passage, it prefers to creep about in bushes or low trees. I have seen it at heights of fifteen or twenty feet from the ground. The statements in *The Handbook* and in the *Field-Guide* that it is not distinguishable in the field from the Marsh Warbler (*A. palustris*) may be correct. However, it always appears to me to be a quite exceptionally beaky bird. The measurements given in *The Handbook* suggest that the bill is normally longer than that of the Marsh Warbler though no longer than that of the Reed (*A. scirpaceus*). Moreover, Witherby notes that the bill is "rather wider at base than either Reed- or Marsh-Warbler", so that I am inclined to believe that this can be a useful diagnostic feature. I should say, therefore, that a Reed Warbler which in colour suggests Marsh, but which has a long, rather uptilted beak, broad at the base, is likely to be Blyth's Reed. As to its call-note, my experience is in entire disagreement with the various renderings given in *The Handbook*. As a rule, I have found the note difficult to distinguish from that of the Lesser Whitethroat, which often occurs in the same places in India.

The Paddyfield Warbler is very readily distinguished from Blyth's Reed. It usually appears to be much darker brown on the upper-parts, and the upper tail-coverts are rufous brown.

But whether it can normally be distinguished from the Reed Warbler I do not feel sure. It appears to me more rufous than any other *Acrocephalus*, but this may be partly due to the bright sunlight in which one often sees such birds in India. I am greatly puzzled by K. Williamson's description of the bird caught on Fair Isle in 1953 (*antea*, vol. xlvii, pp. 297-298)—apart from his emphasis on its bright rufous colour. The long supereiliary stripe which he mentions may be a useful character, but from my observations, I should suggest that this is rather variable. As to its "pale, almost sandy plumage" and its "large appearance", I can only say that my Indian observations, spread over a number of years, varying in season from October to March, and under varying conditions of light, both in reed-beds and in low scrub, are entirely opposite at both these points. Witherby in *The Handbook* notes that "specimens from S. E. Russia and Turkestan in summer are rather paler than winter specimens from India on upper-parts", so perhaps the Fair Isle bird was from that area, if in fact this is a matter of local variation, on which Witherby expresses some doubt. As to size, I can only suppose that there must have been special circumstances that led the observers in Fair Isle to the view that they had a large warbler under observation. I doubt if it should be assumed that such special circumstances will recur. The bill is shorter than that of either Reed or Blyth's Reed; indeed, I should suggest that a bird looking generally like a Reed Warbler, but strikingly rufous brown especially on the upper tail-coverts, and with a rather small beak for an *Acrocephalus*, might fairly be suspected as a Paddyfield.

Finally, the genus *Locustella*. Of this group I have little field experience. Most of the European species occur in India in winter; but my only field observation of any value concerns a Pallas' Grasshopper Warbler (*L. certhiola*) seen on 17th February 1954, near Calcutta. My companion drew my attention to a small bird sitting on a water-hyacinth leaf in the sun. As there appear to be scarcely any field observations on this bird, at any rate in the English language, the following notes, made at the time, may be worth publishing: the bird

"had obviously just bathed, and was vigorously shaking and preening. This it continued to do for a minute or two. It was below us, in good light, distance 15-20 feet. The whole of the mantle to the tail was strongly streaked with dark brown; the tail was rich dark brown, faintly tipped with white; tail very round; the bird kept expanding its tail, but I did not notice any black on it. There was a very noticeable supereiliary streak, extending from the bill well behind the eye. Under-parts whitish, sides of breast and under wing-coverts, etc., buff. At first I thought the sides were streaked, but as the bird continued to shake itself, this impression decreased, and I concluded that the appearance of streakiness

was mainly due to its bathe and to the fact that its feathers were untidy. Probably slight brown streaks on the side would be correct. The legs were orange-flesh; bill similar at base, tip darker."

SUMMARY

Notes on field-identification are offered for four species of the genus *Phylloscopus* which are common breeding birds in Europe, and for five eastern species, two of which have already been recorded from Britain. These are all species lacking any pale wing-bar. It is emphasized that there is plumage variation according to season and age within each species, and that field-identification is sometimes literally impossible. In other examples, however, plumage-differences may be by themselves diagnostic. Other points, such as colour of legs or bill and shape of tail, can sometimes be of value; also habitat-preference and especially call-notes.

Notes are also given on field-characters of certain species of *Hippolais*, *Locustella* and *Acrocephalus*. Some of these, especially in the genus *Hippolais*, come very near to some species of *Phylloscopus*, and may even share such habits as wing- and tail-flicking which are normally characteristic of *Phylloscopus*. Shape of bill, and still more of tail, however, can assist in their identification.

PHOTOGRAPHIC STUDIES OF SOME LESS FAMILIAR BIRDS

LXVI. HOOPOE

(Plates 47-51)

Photographed by C. C. DONCASTER

THE Hoopoe (*Upupa epops*) has already appeared in our series (vol. xlii, plates 15-17), but Mr. Doncaster's magnificent photographs are so different, and show so well the remarkable flight pattern of this bird, that we feel more than justified in publishing them.

The Hoopoe is mainly pinkish-brown in colour, but with a con-



Roger Tory Peterson

BLACK DUCKS (*Anas rubripes*): AMERICA

This species is about the same size and shape as the Mallard (*A. platyrhynchos*), and is in fact not unlike a dark female Mallard, with an olive bill and orange-red feet, dusky on the webs. The bird is dusky-brown above and paler below (see page 340).



Roger Fern Peterson

BLACK DUCKS (*Anas rubripes*): AMERICA

Unfortunately, black-and-white photographs of birds on the ground cannot show the two outstanding features of this rather drab-coloured duck. One is the purplish-blue speculum framed in velvety-black without any visible white, and the other is the white under-wing (see page 340).



C. C. Doncaster

ADULT HOOPOE (*Upupa epops*) AT NEST-HOLE

CAMARGUE, SOUTH FRANCE, May 1953

Note the pattern of black-and-white barring on the wings and tail, and the corresponding barring of black and buff on the crown formed by the dark tips to the feathers of the closed crest. As this picture shows, the bird is capable of clinging to the bark of a tree like a woodpecker; indeed, some authorities have said that it will climb like a woodpecker (see page 356).



C. C. Doncaster

ADULT HOOPOE (*Upupa epops*) AT NEST-HOLE

CAMARGUE, SOUTH FRANCE, MAY 1953

The breadth and rounded shape of the distinctively barred wings can be seen here. There are five white lines on the inner wing, the rearmost extending from the end of one wing to that of the other across the base of the tail. There is also barring across the lower back, but this is less contrasted.



C. C. Doncaster

ADULT HOOPOE (*Upupa epops*) FLYING FROM NEST-HOLE

CAMARGUE, SOUTH FRANCE, MAY 1953

The exact replica of the barring on the upper wing is to be seen from below, and the way these marks are formed by curved shapes on the primaries and secondaries is particularly clearly illustrated in this photograph. Note, also, the shape of the bill and the way in which the crest lies almost flat across the back in full flight.



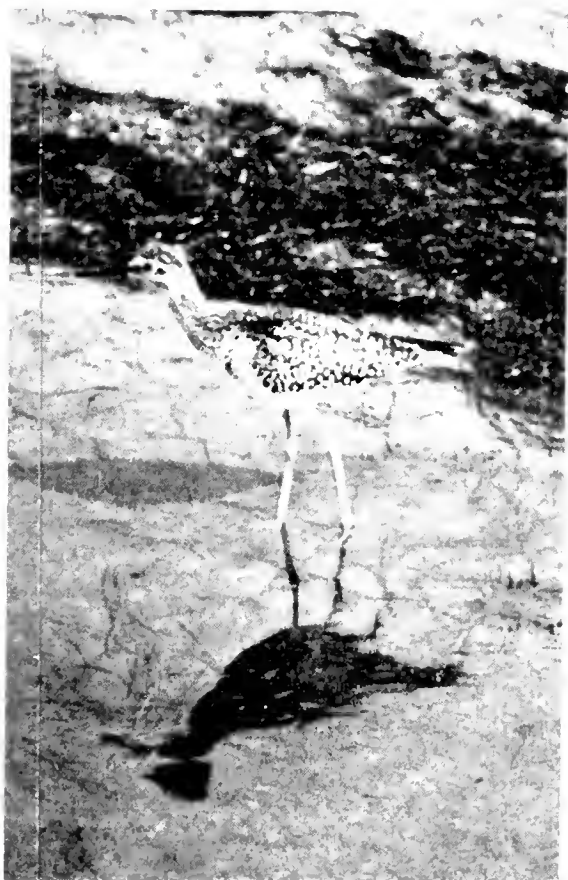
C. C. Duncaster

APRIL HOOPOE (*Upupa epops*) FEEDING FROM NEST-HOLE. CAMARGUE, SOUTHERN FRANCE, MAY 1953.
Here the extent of the uniform pinkish-buff on the under-parts and along the front edge of the inner wing is best shown. These photographs illustrate a typical nest-site, which is normally either a natural or a woodpecker's hole in a tree at a height varying from 6 to 50 feet. Occasionally other crevices, such as those in walls, are used (see page 357).



G. C. Doucet-ster

NORTH HOOPOE (*Upupa epops*) TRING TO NEST-HOLE, CAMARGUE, SOUTH FRANCE, MAY 1953.
Here the crest has been almost completely raised as the bird approaches the nest-hole, and the dark tip to each of the long crown feathers shows up clearly. Hoopoes feed almost entirely on insectivorous matter, which is collected on the ground.



Carl Stockton

LESSER YELLOWLEGS (*Tinga flavipes*). GRAMORGAN, 1953

In these photographs note the short black bill, the head pattern, the spotting on the mantle and wings, the barred tail, the long, slender legs (see page 364).



W. C. Dougherty

POMARINE SKUA (*Stercorarius pomarinus*). TESSON, 1954

The shafts of the primaries in this bird showed as light patches on both wing surfaces. In the left-hand photograph, where the tail is seen from the side, the twisted central feather does not show up separately, so that characteristically the whole tail seems much longer and rather heavy, but it appears clearly in the one on the right (see page 367).

trasting pattern of black-and-white on the wings and tail. As plates 47 and 51 perhaps best show, the final touch of the bizarre is added by the long crown feathers, each of which has a black tip. In its normal closed position (plate 47) the crest formed by these feathers protrudes like a thick cone behind the crown. When the bird is alarmed, however, and frequently as it settles, these feathers are raised to form a "fan" on top of the head (plate 51). The bird has aptly been likened to a huge tiger moth, a resemblance which is enhanced by its rather weak-looking, undulating flight and its broad wings (plate 48). The patterning is formed by five broad white bars across the inner wing (not four as is suggested by the plate in the *Field Guide*). The rearmost of these, as is well shown in plate 48, extends over the base of the tail and along the whole length of the wing across the primaries. When the bird is in flight this pattern can be picked out at a considerable distance and, as plates 49 and 50 show, the markings are the same on the underwing.

About the size of a Mistle Thrush (*Turdus viscivorus*), but with a long, slightly curved bill, this bird attracts attention wherever it appears. Consequently its regular passage in spring and autumn, chiefly in southern England but also further north and in parts of Ireland, has little chance of passing unnoticed. For some considerable time, until quite recently, it was a much less frequent visitor than formerly (see W. E. Glegg, *Ibis*, 1942, pp. 390-434); yet since 1948 numbers of Hoopoes have been reported in nearly every year and breeding seems to have taken place on at least two occasions. In 1954 the spring passage was very wide-spread, and its strength is shown by the fact that no less than 21 were reported from Co. Cork alone. Its breeding range extends in suitable tree-country across most of continental Europe, except Scandinavia, across much of Asia, except the north, and in many parts of Africa. The nest, as in these photographs, is normally inside a hole in a tree, though at times other suitable holes or crevices may be used. There is often no nesting material, and it seems possible that sometimes at least, the grass, feathers, etc., upon which the eggs are occasionally laid may be the remains of the nest of another hole-breeding species. The female incubates the 5-8 yellowish-grey eggs, and the male brings food to her while she sits. She may go for a considerable period without leaving the hole at all, though if for any reason the male's visits are delayed, she will come out to forage for herself. I.J.F.-L.

PLUMAGE AND STRUCTURAL CHARACTERS IN THE YELLOW-HEADED WAGTAIL

By KENNETH WILLIAMSON and I. J. FERGUSON-LEES

As there is a strong possibility that the Yellow-headed Wagtail (*Motacilla citreola*) will occur again as a vagrant in the British Isles (*antea*, pp. 26-29), we give here some observations resulting from our examination of the skins in the British Museum (Natural History) collection. For access to these we are grateful to the Principal Scientific Officer, Mr. J. D. Macdonald. We also thank Mr. H. G. Alexander for certain suggestions concerning field-identification.

In the adult plumages the species is quite unmistakable, as will be seen from the brief descriptions below, but the young in autumn are very difficult, and liable to be confused with *M. flava* races. More detailed attention is given to this phase, but we do not claim that the points noted form an infallible guide, since the range of individual variation in 1st-winter *citreola* may well be wider than the handful of specimens in the collection suggests is the case.

ADULT PLUMAGES

Adult ♂. (Summer) Head, neck and under-parts bright yellow, the sides washed with grey. Narrow black collar on nape; mantle and back ashy-grey, in some specimens admixed with a little greenish- or brownish-olive. Rump and upper tail-coverts darker grey. Wing-feathers blackish-brown, tertials and most of the secondaries broadly margined with white; white tips to median and greater coverts making a prominent double wing-bar. Well-defined whitish wedges on inner primaries and secondaries, most noticeable in the underwing. Tail-feathers blackish-brown with large white wedges on the two outermost pairs. (It should be added that the adult male of the S. Asian race *M. c. calcarata*—which breeds from eastern Persia to southern China and is most unlikely ever to occur in Britain—has a much darker mantle than in the field appears practically black.)

Adult ♀. (Summer) Forehead, supercilium and sides of head dull yellow; crown and nape ashy-grey as mantle, with an olivaceous wash; under-parts dull yellow becoming whitish towards vent.

In both sexes the winter plumage is similar to the adult female described above. First-summer males are probably those birds which have a similar plumage to the adult female, but the grey purer and the yellow deeper in tone.

1ST-WINTER BIRDS

In this part of the world the first-winter birds are most likely to

be confused with Grey-headed Wagtails (*M. f. thunbergi*) at the same stage. As *The Handbook of British Birds* (vol. 1, p. 217) gives no description of this dress in *thunbergi*, we think it worth while making a direct comparison of the immature plumage of these two birds.

Young *citreola*, though suffused with a varying amount of olive in some specimens, are always greyer above than young *thunbergi*, in which the mantle and back are decidedly greenish-brown. The rump of *citreola* is distinctly greyer and the upper tail-coverts darker. The ear-coverts are grey in the Yellow-headed and brown in the Grey-headed birds, and in the former the forehead is not uniform with the crown but is paler, buffish or yellowish-buff. This is an important character and such evidence as we have seen suggests that it may be diagnostic. Both show a supercilium, but this is whiter and more pronounced in most *citreola*. Whistler (1935) and Smythies (1953) say that a yellow supercilium is characteristic of this species "at all ages and seasons," but this does not appear to be so: probably the facts are better represented by Deignan (1945), who says that the yellowish eye-stripe and forehead become very noticeable in the spring.

The under-parts of *citreola* are whiter, less yellowish, than in *thunbergi*, especially on chin, lower belly and under tail-coverts; and *thunbergi*, though suffused with olivaceous on the flanks, lacks the strong greyish wash on the sides which characterises *citreola*. In the young Yellow-headed Wagtail the remiges and rectrices are blackish-brown compared with brown in the Grey-headed Wagtail. In unworn specimens of the former there are clear white tips to the median and greater coverts, and clearly-defined whitish wedges on the inner primaries and secondaries (which should be looked for on the underwing—see, *antea*, plate 8): these are rather obscure in *thunbergi* and the wing-bars are suffused with yellowish-green. Similarly the white fringes of the inner secondaries are broader and purer in *citreola*.

When examined in series, young Yellow-headed Wagtails show a greater plumage contrast than do young birds of the *flava* races—greyish as against greenish-olive upper-parts; almost black instead of dark brown wing and tail feathers, with purer white markings; and whitish under-parts suffused with buff as against a yellowish-white ground with dull buff on the breast.

SIMILARITY WITH EASTERN BLUE-HEADED WAGTAIL

From a study one of us is making of the Yellow Wagtail races it is clear that in eastern Siberia (Yenesei valley and beyond) *M. f. thunbergi* (= *macronyx*) intergrades with the Eastern Blue-headed Wagtail (*M. f. simillima*), whose range is given as the Kolyma River to Kamehatka (Meinertzhagen, 1954), but whose western limit it would be impossible to define. Grant and Maekworth-

Praed (1952) say of this bird: "The immature dress is ashy above, often slightly olivaceous; rump greyer; below, creamy white; chest buffish; under tail-coverts often washed with pale yellow. In this dress it can be confused with *Budytes citreola* Pallas, though this species has a faint wash of yellow or buff on the forehead." We have examined the young birds attributed to this race in the British Museum, and they are extraordinarily like 1st-winter *citreola*, being greyer above (especially on the rump) and whiter below than *thunbergi*. In addition to the distinctions given by the above authors, we find that these birds also have a pale yellowish wash on the axillaries and often the under wing-coverts, this region being white or creamy-white in *citreola*; and they have the wing-bars and the fringes of the remiges tinged yellow, not pure white.

There are in the Royal Scottish Museum two 1st-winter wagtails collected by Dr. W. Eagle Clarke at Fair Isle and labelled "identification uncertain." These birds, strictly on the basis of a taxonomic comparison, are *M. f. simillima*. They match perfectly 15 first-winter specimens of this race in the National Collection (including one from Kamchatka and 4 from Pegu, Burma), having the characteristics of yellow axillaries, under tail-coverts and angle of wing, and lacking the buff forehead and the clean contrast of pure white markings on the blackish-brown wing-feathers. The data with these birds are: ♀, 9.x.1909, wing 80, tail 70 mm. (regd. no. 1910/132/15); ♂, 25.ix.1912, wing 77, tail 69 mm. (regd. no. 1913/50/20). A first-winter ♂ dated 4.xi.1908 (regd. no. 1909/126/10) may also be this race, but is rather less typical though nearer to that form than to western *thunbergi*.

FIELD-CHARACTERS

It will be obvious from the description already given that the adult male in summer plumage must be quite unmistakable with its yellow head and under-parts, its black collar on the nape, and its grey mantle, back and rump. The adult male in winter, and the adult female all the year round, are characterized by their yellow foreheads and superciliary stripes, their otherwise grey upper-parts and their yellow under-parts. But in the first-winter dress, there is the distinct possibility of confusion with immature plumages of the races of the Yellow Wagtail. Also, if a young Yellow-headed Wagtail is seen briefly from behind, confusion with a member of the *alba* group is possible; yet as soon as a view of the head or breast is obtained, the head markings and the absence of a black gorget should indicate at once that the bird is not *alba*.

Some authors consider that it is impossible to separate in the field first-winter *citreola* from first-winter *thunbergi* and *simillima*. H. G. Alexander (*in litt.*), however, writes: "In recent winters I

have made a good many descriptions of *flava* wagtails in India, but always those that have had some spring plumage on the head, otherwise the chance of identifying the subspecies seems remote. On the other hand, whenever I have found a *citreola* among the *flava*—and that means very often—for years past I have had no difficulty at all in separating it, and this whatever the state of its plumage. In the field I should say that there are two ways of distinguishing *citreola*, which seem to me to be infallible. Firstly, the mantle always looks grey, with scarcely a suggestion of brown (in all examples of *flava*, on the contrary, the mantle always looks brownish-grey or greenish-grey, the latter chiefly when the birds are assuming spring plumage). Secondly, the note is quite distinct. It is typically a wagtail note, but normally quite readily separable from that of any form of *flava*."

The note as heard on Fair Isle struck us all as being quite different from that of the *flava* wagtails; it was agreed that it was a slurred monosyllabic "sweep", not so shrill or drawn-out as in any *flava* wagtail. Apart from the note, however, which may well be specifically diagnostic to anyone with a really good ear, the dangers of the field-identification of first-winter *citreola* are, in our opinion, very great. Well-marked individuals, like the first bird on Fair Isle, are probably not so difficult, but we are at the moment uncertain of the range of variation, and it is evident that first-winter *simillima* must at times be almost inseparable in the field from less well-marked *citreola*. However, in our opinion, after spending a considerable length of time watching both birds on Fair Isle and after examining the available skins, the colour of the back, taken in conjunction with the striking wing-bars and the forehead paler than the crown (buffish instead of grey), should make field-identification possible, if a close view is obtained.

STRUCTURAL CHARACTERS

Grant and Maekworth-Praed (1952) say that the emargination of the 3rd primary begins 18-20 mm. up the feather from the tip in *citreola*, whereas in *flava* this notch is only 15-16 mm. (Meinertzhagen, 1954, says 15-17 mm.) from the tip: the relative positions of the notch are between the tips of 7th-8th primaries in *citreola* and 5th-6th in *flava*. This is probably a useful accessory character, although we have found a few immature *thunbergi* and *simillima* in which the notch falls 18 mm. from the tip.

We consider that the hind-claw in *citreola* is generally straighter than in the *flava* races, and that on average the 5th primary is longer. In 25 skins of the Yellow-headed Wagtail the 5th primary averaged 1.9 mm. shorter than the wing-point, with a range of 0.5 to 4.0 mm.; whilst in a similar number of Grey-headed Wagtails the average was 3.0 mm., with a range of 2.5 to 8.0 mm. It is possible that these structural characters might provide useful supporting evidence with the bird in the hand, but it must be remembered that *M. f. thunbergi* shows a lengthening of the

hind-claw towards the eastern part of its range (the so-called *M. f. macronyx*).

REFERENCES

- DEIGNAN, H. G. (1945): *The Birds of Northern Thailand*. Washington. (U.S. Nat. Mus. Bulletin 185). p. 509.
 GRANT, C. H. B. and MACKWORTH-PRAED, C. W. (1952): *On the Species and Races of the Yellow Wagtails from Western Europe to Western North America*. London. (British Mus. (Nat. Hist.) Bulletin, vol. 1, no. 9.) p. 260.
 MEINERTZHAUSEN, COL. R. (1954): *The Birds of Arabia*. Edinburgh. p. 149.
 SMYTHIES, B. E. (1953): *The Birds of Burma*. Edinburgh. (2nd ed.) p. 255.
 WHISTLER, H. (1935): *Popular Handbook of Indian Birds*. London, p. 218.

NOTES

Regular inland breeding of Shelducks in the fens.—It seems desirable to record here that the Shelduck (*Tadorna tadorna*) has been for many years an established and regular breeding bird along the River Nene in the fens, since incorrect reference was made recently to the status there (*antea*, p. 277). Unfortunately, the early history of this population is unknown, as there was virtually no observation in the area until 1949; since then the numbers seem to have remained more or less constant until 1955, when there was a significant increase.

At Peterborough Sewage Farm, Cambridgeshire, birds were said to have been breeding for a number of years when first recorded in 1949. One or two pairs nested there or near-by until 1953, when conditions deteriorated. A pair which was described to A.E.V. as having frequented a gravel pit in Northamptonshire during the spring of 1953 may well have wandered from the sewage farm, three miles away.

In 1950 Shelducks were discovered to be nesting near-by on the Nene Washes in the Eldernell/Whittlesey area of Cambridgeshire, and were said to have been regular for at least 14 years. Two to four pairs were seen annually until 1954, and on 18th April 1955 seven or eight pairs were found, all showing aggressive behaviour as though breeding. Birds are said to nest here in rabbit-holes on the Nene bank and near-by, and lead their young to the river.

The third centre is Wisbech Sewage Farm, at Walpole Marsh on the Lincolnshire/Norfolk boundary, about six miles inland; according to the manager Shelducks have nested regularly since at least 1923. About 3 pairs bred here in 1953 and 1954, and at least 10 pairs (though probably including some non-breeding birds) remained throughout May 1955. The manager reports that the birds nest inside the pipes of unused parts of the effluent system: we ourselves have no definite confirmation of this, but there is certainly a notable dearth of other suitable nesting-sites.

Shelducks have also nested occasionally in other parts of the fens: in 1947 on the floods at Haddenham in Cambridgeshire and

Lakenheath in Suffolk, and perhaps (unsuccessfully) in 1951, 1952 and other years at Cambridge Sewage Farm. There are one or two rather uncertain records of nesting on the Ouse Washes in S.W. Norfolk in recent years; birds have also been seen in spring on the Welland Washes at Crowland in Lincolnshire, and in 1955 a pair bred further up the Welland at Tallington gravel pits in Kesteven. It may be added that in the spring of 1955 birds were encountered, apparently breeding, as far as six miles inland up the river Welland (Surfleet Seas End) and four miles inland up the Ouse (South Lynn sugar factory). Only along the Nene, however, is there an established population breeding inland.

I. C. T. NISBET and A. E. VINE

Lesser Yellowlegs in Britain, 1953-54.—In 1953 and 1954, as in most recent years, a good scattering of American waders was recorded in the British Isles, these including in the former year one Semi-palmated Sandpiper (*Calidris pusilla*), three Buff-breasted Sandpipers (*Tryngites subruficollis*) and one Greater Yellowlegs (*Tringa melanoleuca*), and in the latter year one Wilson's Phalarope (*Phalaropus tricolor*), one Stilt Sandpiper (*Micropalama himantopus*), one Dowitcher (*Limnodromus griseus*) and one Buff-breasted Sandpiper (for details see, *antea*, vol. xlvii, pp. 131-132, 308-311; vol. xlviii, pp. 15-17, 18-20, 138, 328-329). Also, since 1947 the Pectoral Sandpiper (*C. melanotos*), which, however, breeds in Siberia as well as America, has ranked as a regular vagrant, a status which the Lesser Yellowlegs (*T. flavipes*) is now likewise beginning to reach, for there were 4 records in 1950, 2 in 1951, no less than 8 in 1953 and 6 in 1954, a greater total than the sum of all previous known occurrences. Details of the Yellowlegs in 1953 and 1954 have not previously appeared in *British Birds* and a summary of these is set out below. In every case the birds concerned were seen on the ground and in flight and full supporting details have been submitted to us. In some instances the description has appeared in the relevant county report, to which a reference is then given.

LESSER YELLOWLEGS (*Tringa flavipes*) IN BRITAIN, 1953-54

1953

Spring

KENT.—On 19th April two were seen at Cheyne Court, Walland Marsh (W. G. Fluke, R. Codd). (*Kent Bird Report*, 1953, p. 20).

SHETLAND.—On 31st May one was watched at Fair Isle (Miss M. Henderson, Miss I. Kinnear, Dr. and Mrs. J. F. Monk, G. Waterston). (*Fair Isle B. Obs. Bull.*, No. 11, pp. 21-22).

On 26th and 27th May a Greater Yellowlegs (*T. melanoleuca*) had been seen at Boddam Voe, Dunrossness, Shetland (L.S.V. Venables, Dr. J. F. Monk *et al.*).

Autumn

MIDDLESEX, BERKSHIRE, BUCKINGHAM.—On 30th August one was seen at Perry Oaks, Middlesex, and it was recorded there daily until 5th September. On 6th September what was considered to be the same bird appeared at Ham Fields Sewage Farm, Berkshire, some four miles to the west. It stayed at

Ham Fields for most of the following eleven weeks, but during this time it was seen on five occasions at Staines Moor and on nine occasions at Perry Oaks. It was last seen at Ham Fields on 22nd November and at Perry Oaks on 9th December (F. H. Jones, C. M. Veysey and many other observers). On 21st November what was probably the same bird was recorded at Langley Sewage Farm, Buckinghamshire, which lies a little north of a direct line between Ham and Perry Oaks (C. T. McCall).

On 25th and 26th September a second bird was seen at Perry Oaks and at dusk on the 26th it settled on the causeway of Staines Reservoir, after which it was not seen again. Apart from the fact that it differed in plumage, it was observed at the same time as the other was being watched at Ham Fields (F. H. Jones, C. M. Veysey *et al.*). (For fuller details of both birds see *London Bird Report*, 1953, p. 19, and *Middle Thames Naturalist*, 1953, p. 20).

CHESHIRE.—On 7th September one was seen at Frodsham Marsh, where it remained at least until the 14th. (*Birkenhead Sch. N.H.S. Journ.*, 1953, p. 9, and *Merseyside Nat. Ass. Report*, 1953-54, p. 13).

[On 26th September what was probably a bird of this species was seen at Leasowe (W. T. C. Rankin *et al.*). (*Birkenhead Sch. N.H.S. Journ.*, 1953, pp. 9-10).]

GLAMORGAN.—On 11th-12th September one was identified at Oxwich Bay, Gower (G. R. Shannon); where it was also seen and photographed on the 13th by C. Stockton (plate 52).

HERTFORDSHIRE.—During 18th-23rd September one was seen at Wilstone Reservoir, Tring (Mrs. J. B. Cowdy, H. H. S. Hayward).

HAMPSHIRE.—On 29th September one was recorded on the marshes by the sea-wall between Keyhaven and Pennington (R. E. Sharland). (*Hants. Field Club Report*, 1953, xviii, pt. 3, p. 354).

1954 Autumn

HAMPSHIRE.—On 29th August one was watched at Keyhaven Marshes, just inside the sea-wall; flew off over Solent towards Yarmouth, Isle of Wight (G. Kinsey).

During 20th-28th September one was seen by many people at Farlington Marshes (C. J. Henty, G. H. Rees, C. R. Tubbs *et al.*); photographed by G. des Forges and C. W. G. Paulson (*antea*, plates 11 and 12).

CORNWALL.—On 4th September one was identified on the Camel estuary below Trewornan and it remained there until at least the 12th (P. R. C. Ellis, T. J. Willocks *et al.*).

DEVON.—On 11th, 12th and 18th September one was seen by the River Clyst at Topsham (R. F. Moore, F. R. and A. V. Smith, R. G. Adams). (*Report of Devon Bird-watching Society*, 1954, p. 24).

From 24th to 30th September one was watched daily on Ernesettle Marsh, Plymouth (P. J. Dare, F. and J. R. F. Cooper, P. F. Goodfellow, O. D. Hunt, H. G. Hurrell *et al.*). It should be added that on the basis of completely different breast markings, it was decided that the two Devon birds were different individuals. (*Report of Devon Bird-watching Society*, 1954, pp. 24-25).

SUSSEX.—On 13th September one was noted at Pagham Harbour, near Sidlesham (Michael E. Gore).

In connection with the 1954 records Kenneth Williamson has kindly supplied us with the following summary of the Atlantic weather.

"In the early morning of 27th August (E.S.T.) a low "A" between S.W. Greenland and Labrador was causing force 4-6 westerly winds in the Gulf of St. Lawrence and on the adjacent coasts, and skies were generally clear owing to the proximity of a high centred on the Great Lakes and New York State. There

were signs of a secondary centre "B" developing west of Cape Farewell.

"This low pressure area became very complex on the 28th, developing several centres, so that we have "A" off Labrador, another east of Cape Farewell, and a third in mid-Atlantic. One can identify this with "B" of the previous day, and I think it is this centre, moving south and expanding rapidly, that is responsible for the arrival of the Silt Sandpiper, and the first Hampshire and the Cornwall Yellowlegs. Anything that got a drift offshore on the 27th would almost certainly have passed into the expanding warm sector of low "B", and on the 28th would have W.S.W. winds at forces from 6 to 9 all the way from 40° W. to the British Isles.

"Westerly offshore winds still persisted on the American side on the 29th in the Labrador/Gulf of St. Lawrence region though "A" was filling and an extensive continental anticyclone had developed over the States. Low "B", deepening, had moved to a point south of Iceland and westerly winds at forces 6-7 were still reaching the British coast.

"Crossings were possible on the 30th, the 31st and 1st September, but the offshore wind zone in America appears to have been very restricted (Labrador). Low pressure developments in mid-Atlantic during 1st-4th September are so complicated as to defy analysis. A crossing from Labrador might have been possible on the 10th-11th: there was a high centred St. Lawrence and Newfoundland at this time and the low pressure was confined to the eastern side of the ocean. Crossings were a possibility on several days in mid-month but seem unlikely in the period immediately preceding the 20th."

In conclusion, it seems worth remarking on some of the points raised in the details submitted to us of these birds in both years. The majority of individuals have been extremely tame, several allowing approach to within 5-10 yards and one down to 2 yards. Though *The Handbook* quotes J. T. Nichols as stressing that the call is rarely more than double (while that of the Greater Yellowlegs is often triple or polysyllabic), several of these Lesser Yellowlegs quite frequently uttered their notes strung together to form as many as 5-7 syllables. P. J. Dare, in describing the bird seen on Ernesettle Marsh, Plymouth, during September 1954, gives the following outline of its vocabulary:

"Although silent on the ground the bird displayed a fairly wide range of calls in flight. Most frequently uttered was a clear, double "tlee-chu", followed in decreasing order of frequency by "tlee-tlee-tlee", "tlee-tlee-chu", "tlee-tlee-tlee-tlee" (heard twice) and "tlee-tlee-tlee-tlee-tlee" (heard once). The resemblance of the triple "tlee-tlee-tlee" call to that of a Greenshank (*T. nebularia*) was noted by several observers as being softer and less strident than the call of the larger bird. On one occasion a distinctly Greenshank-like "too-too" was heard by P. F. Goodfellow; also a low "tchuk" (once) and a soft "teheoo" (once)."

Several descriptions emphasize that the birds concerned picked food from the water and from the surface of the mud without probing. T. J. Willcocks wrote that the bird in Cornwall in 1954 used to hunt over the mud bordering the channel and, on finding a mud-worm or other object, used to carry it down to the water to wash it before swallowing it. G. R. Shannon reported that the bird in Glamorgan in 1953 once took a small fish, about $1\frac{1}{2}$ inches long, but did not succeed in swallowing it.

All descriptions emphasize the length of the legs which were usually flexed in the characteristic way as the bird moved about. In flight the legs project well beyond the tail. G. H. Rees, describing the Lesser Yellowlegs at Farlington, Hampshire, in 1954, wrote that the bird when first put up sometimes flopped about in the air for a few yards as a Ruff (*Philomachus pugnax*) does, and on one occasion it dangled its legs down as it did this. The same bird once settled on the water, out of its depth, and swam ashore. Several others waded about up to their bellies. P. J. Dare reported that the Ernesettle bird "on several occasions was seen to crouch down onto the grass or water, once with the neck extended along the surface; this behaviour was noted whenever a hawk appeared."

Broad-billed Sandpiper in Lancashire.—On 16th October 1954, on the marsh at Crossens, near Southport, Lancashire, we came upon a small wader, approximately the size of a Dunlin (*Calidris alpina*), feeding on a muddy cattle-track. We approached to within 10 yards of the bird, and later, by means of one of us driving it up to the other, observations were made at distances down to 6 feet. The relatively long bill, slightly decurved towards the tip, was seen to be black, and it was noticeably thick at the base, although it did not strike us as being particularly broad. The crown of the head was brown, streaked with buff, and the broad white eye-stripe and white chin were particularly conspicuous. The nape and hind neck appeared rather lighter than the crown, but were similarly marked. The throat was suffused buffish and was streaked brown, as were the sides of the breast. The breast markings ended abruptly, forming an incomplete gorget, broken in the centre, where the grey-white of the under-parts extended to the throat. The feathers of the mantle, back and wing-coverts were ash-brown, those of the mantle being edged buff, the rest being edged and tipped grey-white to white. The legs were black-brown.

We had difficulty in flushing the bird, and when this was eventually accomplished, a wing-bar very similar to that of a Dunlin was observed, and the central tail-feathers appeared black, those at the sides appearing white. Light, rather snipe-like, markings were observed on the back. With great difficulty, the bird flew for about a hundred yards, and it appeared to be exhausted, although on the ground it was seen to be quite active. On occasions the bird stretched the neck up (T.G.W.), but this was

probably a nervous reaction to our presence. Feeding was accomplished by a picking action rather than by probing. No call was heard.

From the above observations we are satisfied that the bird was a Broad-billed Sandpiper (*Limicola falcinellus*).

W. G. HALE and T. G. WOOD

Ruffs wintering in Cambridgeshire.—On 1st January 1955, a flock of 31 Ruffs (*Philomachus pugnax*) arrived at the Cambridge Sewage Farm. Approximately this number of birds stayed in the area until the beginning of April. The number present then dwindled until the last three members of the flock, all males, left on 25th April. After their first fortnight on the farm the number of birds there fluctuated daily. This was because the birds were also visiting two other areas nearer Cambridge. One of these, a flooded common north of the city gas-works, was alongside the river Cam and only a mile from the city centre. Up to 23 were seen there feeding in company with Lapwings (*Vanellus vanellus*), Snipe (*Capella gallinago*) and Black-headed Gulls (*Larus ridibundus*). They were surprisingly undisturbed by the rowing eights and accompanying noise on the river.

In comparison with older records, the occurrence cannot be counted exceptional. The number of birds present was, however, unusual. Analysis of the records in the *Cambridge Bird Reports*, 1927 onwards, shows that although birds stayed late and arrived early from 1927 to 1931, none was recorded in winter until 1934-35. Since then, apart from 1939-40 and 1947-48, Ruffs have been seen every winter, the numbers being generally below 10, but with flocks of 12 in 1937-38, 25 in 1938-39 and 30 in 1942-43. There is no particular correlation with hard winters (only three were seen in 1946-47), but birds have tended to arrive on the farm at the start of a cold spell (1st January 1955 and 27th January 1954).

Their occurrences are generally accompanied by the arrival of Green Sandpipers (*Tringa ochropus*) and influxes of Snipe and Jack Snipe (*Limnocryptes minimus*). This suggests that the records arise more from local weather concentrations, the birds being frozen out of stubble, ploughed land, rough pastures, fens and marshes, than from any true external weather movement.

D.F. considers that there is probably a regular winter flock in Cambridgeshire, birds having been also noted in winter on the river washes to the north and in the fens.

D. FARREN and D. I. M. WALLACE

Pomarine Skua in Essex (London area).—On 28th November 1954 my wife and I identified a dark phase Pomarine Skua (*Stercorarius pomarinus*) upon the water at Banbury Reservoir, Walthamstow. We had excellent views of the bird down to 25 yards range while it was on the water, and later of it flying, and feeding

on the carcase of a male Mallard (*Anas platyhynchos*). Its plumage was a uniform dark brown, but at close range we noted that the cheeks, ear-coverts and upper breast had a bronze sheen. The bill was yellow-brown, with a very dark, hooked tip. There was a small white patch at the base of the upper mandible. In flight the bird appeared heavier and less bouyant than does an Arctic Skua (*S. parasiticus*), and the shafts of the primaries showed as light patches on both upper and lower wing-surfaces. This feature can be seen in the photographs reproduced on plate 52. The left-hand wing had some primaries and possibly some coverts missing, so that the white patch was made more conspicuous by the bases of the adjoining feathers. Apparently one of the central tail feathers was missing, but the other can clearly be seen in the photographs. It was nearly twice the length of the rest of the tail, blunt ended, and with a decided twist which made it appear thick when looked at from the side (see photographs).

Messrs. H. W. Rudd and E. T. Nicholson visited the reservoir on the same afternoon, and confirmed our identification. The bird remained there until 4th December, and I was able to observe it for short periods each day. During this time it was seen to chase Black-headed Gulls (*Larus ridibundus*), a Herring Gull (*L. argentatus*) and a Carrion Crow (*Corvus corone*), but none of these birds was seen to disgorge any food. In the six days it consumed the carcases of 1 Mallard, 2 Black-headed Gulls and 1 Coot (*Fulica atra*). It was not known whether the skua had killed these birds, but the carcases were quite fresh.

I understand that this is the first record of this species in the London area this century.

W. C. DOUGHTY

Lesser Black-backed Gulls wintering in exceptional numbers in Somerset.—In his report to the British Trust for Ornithology (*antea*, vol. xlv, pp. 3-17) Mr. J. A. G. Barnes summarizes the status of the Lesser Black-backed Gull (*Larus fuscus*) in the British Isles and, as a result of organized enquiries in the winters of 1949-50 and 1950-51, indicates an apparent trend towards an increase in the number of resident birds. Surveying winter distribution on a regional basis, the author shows that mid-winter birds were found in all vice-county areas under review and, supported by ample evidence, he concludes that much larger numbers winter in the north of England than in the south. It may, therefore, be of interest to record that during the winter of 1954-55 Mr. Barnes' conclusion was apparently in complete reverse, since a population far in excess of any yet reported for the months November-January was present in north Somerset, a population which for roosting purposes had its main quarters on the site of the Chew Valley water scheme—six miles south of Bristol and about twelve miles inland.

The construction of an enormous storage reservoir in the Chew

Valley was in active progress throughout 1954 and by the close of the year work was in an advanced stage of completion. Considerable areas were, however, still not inundated and these, cleared of hedges, trees and most vegetation, were the constant resort of large numbers of Lesser Black-backs, and also of Herring Gulls (*L. argentatus*) and Black-headed Gulls (*L. ridibundus*). Frequent observations, chiefly by B. King and P. J. Chadwick, showed that the Lesser Black-backs and Herring Gulls were reaching the site in the late afternoons and evenings, with maximum concentrations shortly before dusk, and that both were staying at the reservoir to roost. Although the two species were usually to be found in company, the Lesser Black-backs were sometimes seen to be roosting entirely alone. Moreover, it was invariably noted that all were in adult or near adult plumage. Very few young birds of *L. fuscus* were, in fact, identified at any time, but some may have passed unrecognized among Herring Gulls, the majority of which were immature. Apart from a few dark-mantled examples, possibly of Scandinavian origin, the birds under review were undoubtedly of the British form *L. f. graellsii*.

During the twelve months from mid-March 1954, the site was in frequent, if not continuous, use as a roosting place of Lesser Black-backs, and in numbers which from the first week of August to early January 1955 often assumed exceptional proportions. Initial counts were relatively low, with numbers seldom exceeding 550 in May and June, and with maximum totals of 150 and 170 on 17th April and 11th July respectively. At 9 p.m. on 3rd August, however, B.K., P.J.C. and the writer located a single flock numbering little short of 500, while at the same hour on the 19th and 24th B.K. made counts of 600 and 700 birds. Other late evening totals included 525 on 19th September and 450 on 28th November. Figures in December, far from being diminished, were remarkably high, with counts by B.K. and P.J.C. of 630 or more at 4.30 p.m. on the 26th and about 720 at the same time on the 28th. Numbers at the New Year were similarly high, but the onset of severe weather caused a rapid dispersal and in the late afternoon of 9th January B.K. could find no more than 320 birds. Thereafter the dispersal continued and by 6th February the number was down to about 120. At dusk on 13th March not more than 50 were found at the reservoir.

In the absence of more complete details it should, perhaps, be stated briefly that for the most part the Chew Valley Lesser Black-backs fed in fields over a wide area inland and that, in view of mid-winter observations in various scattered localities, the majority were evidently feeding east of the reservoir. At Hinton Blewett (4 m. S.E.) on 28th November and Burnett (4m. N.E.) on 24th December P.J.C. saw parties of 50 and 16 respectively, while the same observer, when watching birds coming in to the roost on 28th December, counted more than 500 arriving over Bishop Sutton

—immediately due east of the site. Flocks of 85 on 27th November and 71 on 20th December seen by G. L. Boyle in fields at Semington, near Trowbridge, Wiltshire (20 m. E.) were in all probability made up of birds from the Chew Valley site. No large numbers were reported from the Bristol Channel coasts and Severn Estuary where, as pointed out by R. H. Poulding (*in litt.*), the species, in any case, is always a scarce feeder. Monthly counts by R.H.P. along the Bristol Avon, from Hanham (Glos.) through the City to Avonmouth, yielded results showing no appreciable difference from those of previous years.

H. H. DAVIS

Lesser Black-backed Gulls in November and December in the London area.—In connection with the above note by H. H. Davis on Lesser Black-backed Gulls (*Larus fuscus*) wintering in Somerset, we feel that the following figures for this species in the London area during the last two months of 1954, which H. P. Medhurst has kindly given us, are of interest. Only numbers over 20 are brought in and Inner London is excluded.

LESSER BLACK-BACKED GULLS (*Larus fuscus*) IN THE LONDON AREA
DURING NOVEMBER-DECEMBER 1954

HERTFORDSHIRE.—Springwell Gravel Pit. 4th and 5th November, *ca.* 100 (B. P. Pickess).

MIDDLESEX.—Shepperton. During November-December numbers varied from 20 to 50 on Shepperton rubbish dump (P. R. Griffiths).

SURREY.—Island Barn Reservoir. 5th and 11th November, *ca.* 300 estimated among *ca.* 12,000 roosting gulls (D. Parr).

Richmond Park. 6th November, *ca.* 100 (Lord Hurcomb).

Beddington Sewage Farm. December, 25-40 present daily with a maximum of 81 on the 21st (B. S. Milne).

Rosehill Recreation Ground, Sutton. 5th December, 36 (D. A. Cox).

The autumn passage of Lesser Black-backed Gulls regularly continues into November in the British Isles, so that the November records above may just indicate late departure.

Scops Owl at Skokholm, Pembrokeshire.—In the early afternoon of 25th April 1955, G. Stansfield and I were collecting driftwood from Little Bay, Skokholm, and H. Dickinson was on the cliff-top at the north side of this gully. The latter drew our attention to a small owl perching in a crevice in the opposite face. The bird was in shadow, and we took it for a Little Owl (*Athene noctua*) until we began to suspect that it had ear-tufts, and was rather small and slim.

H.D. retired to bring other visitors, and shortly afterwards the owl flew over to a hollow below where he had been sitting. The hollow was barely six feet from the top, and by climbing up we were able to see the bird from a distance of about twelve feet. It was still in shadow, but the ear-tufts were plainly visible. The face was remarkably cat-like, with a dark fringe, and a streak from

the crown to the bill. The breast was pale grey-brown with dark striations, and the primaries were barred with dark brown. The upper-parts were not visible.

H. D. then returned with my wife and seven other observers, who watched until G.S. had brought a trammel-net. We were agreed that the bird could only be a Scops Owl (*Otus scops*). This we were able to confirm in a few moments, for the net was weighted with stones, dropped over the mouth of the hollow, and the bird became entangled at once.

In the hand it seemed very tiny. The ear-tufts were kept depressed. The most striking feature was the iris, pale lemon-yellow, but with bright orange in the lowest sector. After ringing and examination, the owl was photographed and released. It was not seen again.

This is the first record for Skokholm, and apparently the second for Wales, the previous specimen having been at Pembroke in the spring of 1868 (M. A. Mathew, *The Birds of Pembrokeshire*, 1894).

PETER DAVIS

Jackdaw roost continuing throughout breeding season.—With reference to John Griffith's note (*antea*, p. 139) on Jackdaws (*Corvus monedula*) roosting communally during the summer, the following may be of interest.

Our observations were carried out somewhat irregularly during 1952-55 on a Carrion Crow (*C. corone*) roost at Banstead in Surrey. There has, incidentally, been a decrease since 1947 in the number of Carrion Crows using the roost—to judge from figures recorded in *The London Bird Report* for 1947, when counts of 209 and 176 were made. During the period November to mid-March, only Carrion Crows would be present at the roost, the numbers being approximately constant at 100. During the last week of March and first week of April the numbers would decrease to 50-60. The number using the roost then remained about the same until the end of June, then increased to the winter number by August. Jackdaws would first use the roost in mid-April when c.100 would be present, the numbers increasing to c.300 by the end of the month. There were slight increases during May and June, then a sharp rise to c.1,000 in July, these birds continuing to use the roost until early October. During the winter the Jackdaws used a Rook (*C. frugilegus*) roost some ten miles away.

B. W. BROWNSEY and D. B. PEAKALL

Wing-measurements of Blue Tits.—*The Handbook* states that the wing of the male Continental Blue Tit (*Parus c. caeruleus*) measures 64-70 mm. (12 measured) and that that of the male British Blue Tit (*P. c. obscurus*) measures 60-65 mm. On 10th October 1954, at Sway, Hampshire, I caught a Blue Tit whose wing measured 67; A. W. Boyd was with me and agreed that this was correct. I recovered it twice in December and took the opportunity

of confirming the figures. On 12th December I caught another whose wing measured 68 mm; my wife helped check the measurement and agreed with it. On 2nd January 1955 I retrapped another Blue Tit which had been ringed at Sway as a nestling on 28th May 1933 and first recovered on 21st February 1954; its wing measured about 67.75—anyhow between 67 and 68 mm.

Since the capture of the first one with Continental measurement I have measured many Blue Tits besides those listed above, and no others have been over 65.5; most have been between 61 and 64 mm.

The second bird mentioned above did look decidedly larger, and longer in the tail, than another Blue Tit with wing under 65 mm. which was placed in a cage with it for comparison, but the racial differences which *The Handbook* mentions of shade and of marking had with more or less success to be imagined, after the discovery of the Continental wing-measurement. The same applied to a bird with wing 68 mm. which I trapped at Portland Bill, Dorset, on 27th September 1954.

Sway would not appear to be on a migration route for in fourteen years I have never caught any other species in winter that could be suspected to be of Continental origin. The explanation may be that a live bird's measurements are larger than those of a skin, but it would appear that the figures in *The Handbook* need revision.

EDWIN COHEN

[Differences in wing-measurements can, of course, be caused by variations in the method employed; in fact, standardization of the techniques used on live birds is much needed. In the present instance, however, it is clear that the high figures cannot be due to a method which exaggerates, since the majority of Blue Tits examined had wings that fell within the normal range of length. In view of Mr. Cohen's findings we hope that ringers will particularly note the measurements of British-born Blue Tits to see how wide is the occurrence of these large birds. In connection with this subject it is of interest to add that wing-measurements supplied to us by Mr. H. E. Axell of 98 Blue Tits trapped at Brenzett, Hythe and St. Mary's Bay, Kent range from 56 mm. to 66.5 mm., the greatest number (54) being between 61 and 63 mm.; the largest of these birds, however, may have been of Continental origin, since the four with wings of over 65 mm. were caught in the winter months.—EDS.]

Wintering Blackcaps in Worcestershire.—During February 1955 no less than four Blackcaps (*Sylvia atricapilla*) were identified in gardens in Malvern, Worcestershire. Although wintering Blackcaps have been recorded in England regularly in recent years, this number in a small area seems remarkable.

On 6th February 1955 I saw a female Blackcap in my own

garden. The crown of this bird was a bright reddish-brown, the under-parts a lightish grey and the upper-parts brownish-grey.

On 10th February Miss E. M. Danne asked me to identify a bird which was visiting a feeding table in another garden. That afternoon I was able to watch a Blackcap there. The cap was more blackish-brown than that of the female, the under-parts were darker and it was brownish above. I suggest that it was a first-winter male. Miss Danne, who saw this bird with me, told me that this was not the same as what was obviously a Blackcap that she and Miss Morgan had been watching during the previous fortnight. Their bird differed in being distinctly more olive-green above.

On 13th February the ?first-winter male was joined by an adult male and the two became frequent visitors to the bird-table. This adult male I watched on 2nd March, when I noted its glossy black crown, ashy-grey nape, slightly greenish-grey upper-parts, and paler grey under-parts. The two birds visited the table frequently during the cold spell and until the end of March, the adult even coming in through the open window for food. M. PALMER-SMITH

Gait of Dartford Warbler on the ground.—In long tussocky grass on the Hampshire coast, on 28th August 1953, I almost trod upon a Dartford Warbler (*Sylvia undata*) which flew low and feebly with strong undulations and bobbing tail, and dropped into the cover of the long grass after only a few yards. Flushed a second time, it again moved only a short distance. This time for a short while I could observe it between the clumps of grass and was surprised to see it running across the ground. In my endeavour to approach, I flushed it yet again, when it sought the sanctuary of the nearest gorse some ten yards away. Apart from the fact that this seems a peculiar situation, *The Handbook* makes no mention of its gait, and this is presumably a matter upon which little observation has been made. PETER R. GRIFFITHS

Alpine Accentor in Sussex.—On 24th April 1955, we saw an Alpine Accentor (*Prunella collaris*) at Telseombe Cliffs, Sussex. First observed when resting in short grass on the top of a low cliff, it soon flew to the cliff-face where it moved about rapidly on the broken surface in search of food. Sometimes the bird starting almost at beach level worked right up to the cliff-top and there rested for a short time.

The following description is taken from detailed notes recorded in the field: The head, shoulders and nape were grey with some slight traces of brown. The breast was grey. On the lower throat there was a small pale crescentic marking, but at close range through glasses the whole throat appeared sealy and lighter than the breast. The back was streaked light and dark brown. The flanks were chestnut-red with some pale buff which gave the sides

of the bird a striped appearance. The warm colour on the flanks extended in diffused form to the sides of the belly. The wings were brown and had a dark bar with a single white edge. The tail was slightly forked and brown with some white near the base of the outer feathers. The upper mandible was very dark grey and the lower yellow. The legs were flesh pink and the eye dark. A ringing, disyllabic flight-call was heard on one occasion.

The bird was seen on 24th April by Messrs. S. Bayliss Smith, G. des Forges and A. H. Smith, but other observers were unable to locate it the next day.

B. and C. M. JAMES

Richard's Pipit in Sussex.—Although a few Meadow Pipits (*Anthus pratensis*) and Tree Pipits (*A. trivialis*) were moving eastwards near Eastbourne, Sussex, during the morning of 18th September 1954, under cloudy conditions with drizzle, it was not until there was a change of wind from N.W. to S.E. and the weather became brighter about mid-day that the numbers increased. This was most noticeable over the Crumbles where a few pipits dropped out to feed. One of these attracted attention by its large size and upright carriage on the ground and by its loud, sparrow-like double "rer-up" note in flight. Having had previous experience with this species, I immediately recognized it as a Richard's Pipit (*A. richardi*). Other details were noted and the description appears in *The Sussex Bird Report* for 1954.

L. P. ALDER

Serins in Camarthenshire—On 5th January 1955 at Bertwn, a deserted farm by the River Gwendraeth and near Kidwelly in Camarthenshire, I saw two small finches which I was able to identify as Serins (*Serinus caurius*). With other birds, including Meadow Pipits (*Anthus pratensis*) which were close enough for an accurate comparison of size, they were feeding on the soft ground of what had been a pond. In all, I watched them for some 15 minutes at ranges down to 20 feet. My first impression was of two little, rotund birds distinctly smaller than the Meadow Pipits, and in colour bright yellow strongly marked with dark streaks. A closer inspection showed the yellow to be not quite so bright as was first thought.

The birds had short, dull-coloured bills. They had yellow foreheads and eye-stripes, and their breasts and rumps were this same colour. The flanks were fawn, strongly streaked with dark brown, and the wings appeared brown with faint barring. Their tails were short, slightly forked, and of a dark brown colour. The legs were dark. It seemed probable that both were males.

W. G. LUTON

LETTER

IDENTIFICATION OF THE BROAD-BILLED SANDPIPER AT ADEN

SIRS,—After spending about two years at Aden (1946-1948), I concluded that the Broad-billed Sandpiper (*Limicola falcinellus*) was a regular visitor, despite the fact that there were no other records of the species from south Arabia. This conclusion was published in *Ibis* (vol. 92, p. 56) and *British Birds* (vol. xlii, p. 333).

However, in his book *Birds of Arabia* (1954, p. 495), Colonel R. Meinertzhagen has, by implication, challenged this conclusion, apparently on the grounds of mistaken identification. He writes: "Recorded in small numbers at Aden from July to March . . . on sight only, with the comment 'Their appearance was distinctive', which is not the case. Also 'flocks of 60' is scarcely normal for this species". He then raises the wider question of the field-identification of the species in winter plumage: "I know of no field character which distinguishes this bird from the Dunlin except posture. . . . The call closely resembles that of the Dunlin".

I would like to give details of my experience of identifying the Broad-billed Sandpiper in order to support the statements on its status at Aden and to summarize the field-characters of the bird in winter, since these do not seem to have received much attention.

Broad-billed Sandpipers in summer plumage occurred in March and July-October. It will be generally agreed that there is no mistaking this plumage (*antea*, vol xl, p. 175 and plates 16-18) and I do not propose to go into it further, except to say that I have field-notes available. In March, August and September, with birds in summer plumage, were some in transitional and winter plumages. I found four features, common to the bird in all plumages, which were, in combination, quite diagnostic:

- (1) Squat appearance due to short legs.
- (2) Rather heavy-looking bill (for the size of the bird), decurved at tip only. The bills of both the Dunlin (*Calidris alpina*) and the Curlew Sandpiper (*C. testacea*) appeared slenderer and more uniformly curved.
- (3) The note was easily separable from that of any other wader (*antea*, vol. xlii, pp. 333-334).
- (4) Size between Dunlin and Little Stint (*C. minuta*).

In addition, in winter, two other points were useful, particularly for picking out individuals or flocks of Broad-billed Sandpipers mixed with other waders:

- (5) At fairly close range, the head appeared more streaked than that of the Dunlin. In addition to the whiter superciliary stripe, a trace remained of the two pale stripes over the

crown. This does not show on all skins, but was usually visible on living birds.

- (6) Belly always pure white, whereas that of the Dunlin in winter often has some cloudiness or dark blotching.

On 6th January 1948 I was able to confirm identity by shooting a Broad-billed Sandpiper in winter plumage. I could not preserve the skin but made detailed notes which I still have. The diagnostic points were:

- (1) Upper mandible considerably flattened after about 11 mm. from base.
- (2) Width of upper mandible very slightly greater about 11 mm. from base than near nostrils. In the Dunlin the upper mandible tapers, with maximum width at base. In the Broad-billed Sandpiper the upper mandible usually widens in the middle (*The Handbook*, vol IV, p. 293), though there is no appreciable widening in some specimens in the British Museum (Natural History), the upper mandible being of constant width from the nostrils to the middle.
- (3) Lesser wing-coverts dark brown, edged whitish. The Dunlin has paler lesser coverts.

Other points: Wing-length 105-106 mm. Bill 31 mm. (from feathers), straight but down-curved for last 10 mm. Belly white.

Thus the appearance of this species in winter was distinctive enough for me to be able to pick out one and shoot it.

The identity of the flock of c. 60 seen on 24th February 1947 was equally certain, as my field-notes show. I did not, in fact, state that a flock of this size was normal for the species. It was the largest I saw. Col. Meinertzhagen, in his book (pp. 53-58), gives many instances of migratory birds forming unusually large flocks in the migration-season.

I would suggest that the distinctiveness or otherwise of a species is a personal assessment. It depends not only upon the experience of the individual with this and similar species, but also upon his motivation for learning its field-characters. I had no gun during my first year in Aden. I knew that the Broad-billed Sandpiper had not been recorded thereabouts, and the only way I could authenticate my records was by studying the bird carefully in the field and writing down my observations.

P. W. P. BROWNE

30 AUG 1955
PURCHASED



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Various other conventions concerning references, including their use in the text, should be noted by consulting previous examples.

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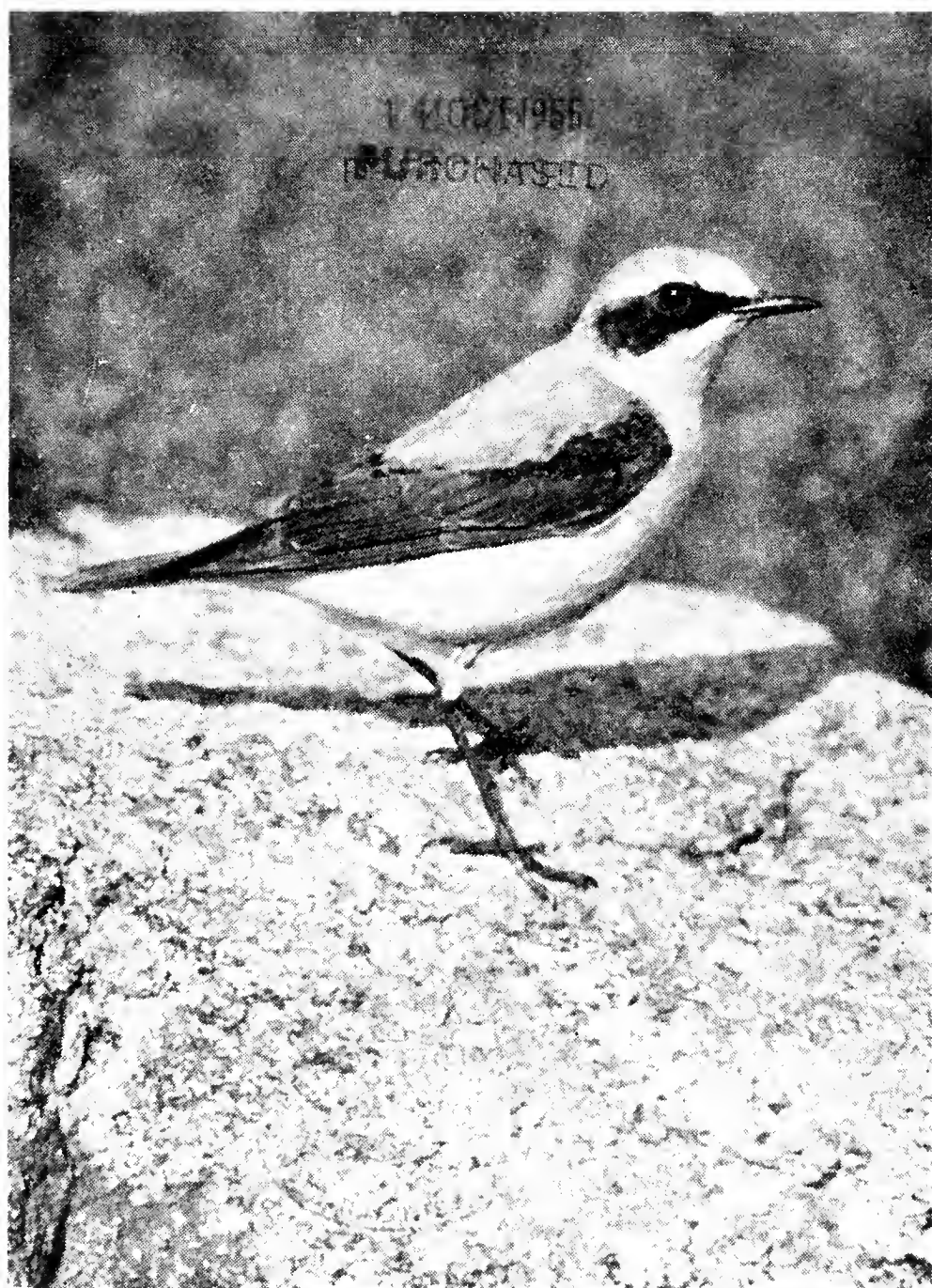
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SEPTEMBER 1955

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Cover photograph by G. K. Yeates: Wheatear (*Enanthe cenanthe*).



BRITISH BIRDS

RING-NECKED DUCK IN GLOUCESTERSHIRE : A NEW BRITISH BIRD

By PHILIPPA SCOTT

ON the afternoon of 12th March 1955, while sitting in the studio of my house at the Wildfowl Trust, Slimbridge, Gloucestershire, I saw an adult male Ring-necked Duck (*Aythya collaris*) settle on the pond about 15 yards from the window. On the following afternoon the bird reappeared and was watched by my husband, Peter Scott, and by Hugh Boyd. On the morning of 14th March it was seen in flight over the Orchard Pen, but it did not return after that. We later learnt that the bird was also seen on 12th March by Bernard King.

Its rapid departure was not anticipated and so unfortunately no photographs were taken. The possibility that this bird was an escape is very remote. The species is so rare in captivity that no one keeping them would allow their specimens to fly and young have never, so far as is known, been successfully reared in any collection in Europe. It seems far more probable that the bird was a genuine straggler which had made the passage from eastern North America.

Although it is the first authenticated record of the Ring-necked Duck in Europe, the species was originally described by Donovan from a male "exposed for sale in Leadenhall Market, London" in January 1801 and said to have been taken in the fens of Lincolnshire. It is not clear why this early record has never been accepted, as, at that date, it seems very unlikely that it could have been an escape. Ring-necks may well have been overlooked during the intervening 150 years.

NOTES ON THE RING-NECKED DUCK

By PETER SCOTT

THE Ring-necked Duck (*Aythya collaris*) at Slimbridge was a drake in full plumage, exactly resembling the single captive drake in

the Wildfowl Trust's collection, except that it was full-winged instead of being pinioned. The bird was observed in front of my studio window at ranges down to 10 yards, so that all the specific characters given below were clearly observable. On the second afternoon it was last seen swimming with tame Tufted Ducks (*A. fuligula*) and Scaups (*A. marila*).

The Ring-necked Duck is usually regarded as the N. American form of the Tufted Duck and there is a superficial resemblance between the males of the two species. The drake Ring-neck has the same basic pattern as the Tufted, but the "panel" of the flanks comes to a white peak at the forward end and shades to a soft vermiculated grey at the after end. There is no crest, but the head has a rather high crown, and round the neck is the dark chestnut ring which gives the bird its name. In the field this character is hard to see; much more prominent is the whitish subterminal band across the bill, and the whitish line across the base of it which follows the edge of the feathering. The alternative name, Ringbill, is therefore more appropriate.

In spite of its resemblance to the Tufted Duck it is doubtful if the relationship is quite so close as it might seem. The facial pattern of the female, probably a more conservative character than the plumage of the male, is quite different from that of the female Tufted Duck. There is whitish plumage round the eye and under the chin, so that the bird is in some respects more similar in pattern to a female Pochard (*A. ferina*) than to a Tufted Duck or Scaup. In habits, however, the Ring-neck bears much the same relation to other Newfoundland diving ducks in America as the Tufted does to those in the Old World.

The Ring-neck breeds in three isolated areas: firstly, in the east of Canada, in New Brunswick and Newfoundland; secondly, in a belt stretching north-westwards from the Great Lakes into the Prairie Provinces of Canada; and, thirdly, along the western edge of British Columbia. There are two main wintering grounds—in the south-eastern United States from the Mississippi to the Atlantic, and west of the Rocky Mountains in Oregon and California.

Ring-necks are essentially fresh-water ducks, preferring marshes and shallow waters to lakes, and appear to be mainly herbivorous.

[Mr. Scott has very kindly painted for us a special plate illustrating both sexes of the Ring-necked Duck and also of the Black Duck (*Anas rubripes*), of which a female was shot in Ireland in 1954 (*antea*, p. 341). This will be reproduced in colour in a forthcoming issue.—EDS.]

HUDSONIAN WHIMBREL AT FAIR ISLE

BY KENNETH WILLIAMSON and VALERIE M. THOM

(*Fair Isle Bird Observatory*)

WHILST bird-watching over an area of close-cropped grassland at the south end of Fair Isle on 27th May 1955 the writers, together with visitors to the Bird Observatory, disturbed a party of half-a-dozen Whimbrels (*Numenius phaeopus*). As they flew off, V.M.T. remarked that one of the birds was without a white rump.

During the remainder of the day, and on the 28th, we kept this party under observation, often at very close quarters from the cover of dry-stone dykes, and were able to satisfy ourselves that the odd bird was an example of the American race, the Hudsonian Whimbrel (*Numenius ph. hudsonicus*)—called Hudsonian Curlew in the *A.O.U. Checklist*.

The bird was distinctly smaller than its companions (some of the observers estimated from one-third to one-quarter smaller) and of slenderer build and sleeker appearance. The disparity in size was most obvious when the birds were in flight. The head-markings were similar to those of the European Whimbrel but were more pronounced, due to the paler colour of the cheeks and more complete eye-stripe. In flight, the bird offered a distinctive pattern of dark brown primaries contrasting with paler brown, buff-mottled secondaries and coverts, and a warmer brown mantle, rump and tail. The last, in fact, appeared in some lights to have a russet tinge. The bill was similar in length to the Whimbrel's, blackish in colour, and strongly decurved over the distal half. The legs were grey: the American authorities consulted later say these project noticeably beyond the tail in flight, but in our bird this projection was very slight and was not obvious until looked for.

As mentioned, the head markings were characteristic of the species, a rich brown cap divided by a whitish line, greyish-white cheeks, white chin and throat, and a complete blackish-brown stripe running from the base of the bill to half-an-inch or so behind the eye. At a distance the under-parts looked immaculate, the belly and vent white and the breast suffused with brownish-buff; but at really close quarters the breast seemed to have a lovely pearly mottling quite different from the boldly streaked front of the Whimbrel. Later, when we had an opportunity of examining skins, we saw that this effect was due to a difference in the marking on the individual feathers, for whereas the European bird has a dark brown mesial streak, the most obvious mark in the American is a paler sub-terminal bar. Nor were the upper-parts so boldly marked, the dark streaking being less heavy and considerably reduced on the upper mantle, which was a rich, warm brown contrasting with the more greyish tone of nape and sides of neck. In flight, the buffish underwing and axillaries were seen to be strongly barred with brown, and the tail was also barred. The primaries appeared to be uniform blackish-brown, but a very close view of the flying bird revealed that the inner ones at any

rate were obscurely barred. A white line, visible near the wing-edge, appeared to be due to the exposed quill of the outermost feather.

The bird remained on the island until 31st May, although the Whimbrels it was with on 27th-28th May had gone by the 29th. We found it much more difficult to approach when on its own, and when disturbed it would take longer flights—nearly always descending, however, on some area of close-cropped pasture. Only very occasionally was it seen to visit the weed-grown tidal rocks, and it did not remain on the shore for any length of time. When K.W. and Mrs. Williamson watched it on the afternoon of the 28th it was feeding desultorily with the Whimbrels, and the group, growing suspicious of our cautious approach, adopted the "pseudo-sleeping" posture. The call-note was heard on a number of occasions, and there were ample opportunities for comparing it with that of the European bird, but we were unable to detect the slightest difference. Its action in flight would not have distinguished it from others in the flock, and its feeding behaviour was also similar. On a few occasions it was aggressive towards its larger companions, which always gave way before it.

Summarizing the field-characters, we would say that the absence of white on the rump, and the pale grey-brown area in mid-wing contrasting with the warm brown back and the uniform blackish-brown primaries, were at once diagnostic. On the ground identification was less easy, but at close quarters the whiter cheeks and under-parts combined with the mottled rather than streaked effect on the infuscated breast, and the warmer coloration of the mantle, sufficed to distinguish it from the Whimbrel.

Those who saw the bird, and submitted notes upon it, were Mr. and Mrs. Ian Waddington, Mr. and Mrs. Compton James, Mrs. K. Williamson, Miss Anna Burt, Mr. Alex M. Mackenzie, Mr. K. Linford, Mr. Donald M. Walker, Mr. Harry A. Craw and the writers. Mrs. A. W. Thom arranged with Dr. A. C. Stephen of the Royal Scottish Museum to send skins of the two races to Fair Isle, and we are grateful to them for this assistance.

A METEOROLOGICAL NOTE

It may seem idle to speculate on the immediate origin of this bird, since it could have been pursuing a northwards migration in company with European Whimbrels after being some time on the European side; but some interest attaches to the question since A. W. Boyd informs us that he identified a Baird's Sandpiper (*Calidris bairdii*) in Cheshire, the first for that county, also on 27th May (see p. 417). Writing of the return migration of the Hudsonian Whimbrel from its winter quarters on the Pacific coast of South America, Bent (1929) says: "It reaches Florida during the latter half of March, the Carolinas about the middle of April, and Massachusetts about the middle of May." Thus, for a fortnight or so, many must have been sufficiently far north to sustain a trans-Atlantic drift in suitable weather conditions. Examination of *The Daily Weather Report* of the Meteorological Office of the

Air Ministry shows that such conditions did in fact exist during the four or five days previous to 27th May, there being a belt of moderate to fresh westerly winds between 40° and 50° North, and periodic fog on the New England coast associated with frontal weather.

A TAXONOMIC NOTE

Although Bent (1929) and Forbush and May (1939) give this bird specific rank, the *A.O.U. Checklist* treats *hudsonicus* as the American race of *Numenius phaeopus*. Considering the degree of similarity usually implied by racial relationship, we found this form markedly distinct. One feature which impressed us was the noticeably smaller size and altogether slimmer build; but Mr. Derek Goodwin, who took measurements of a series of European and American birds in the British Museum (Natural History) collection, found some overlap between the two forms. It has also to be remembered that the majority of the Whimbrels migrating through Fair Isle are bound for Faeroe and Iceland, where the European race attains its upper size limit and has indeed been separated from Scandinavian stock as a larger form, *islandicus* (see Salomonsen, 1935, for measurements). The disparity in size, therefore, cannot be significant.

More important to the question of speciation is the lack of a white rump in the American bird, since this could lead to ethnological differences which might establish reproductive isolation if the ranges of the two forms were ever to overlap. In the closely-related Curlew (*Numenius arquata*) the white rump appears to have value in courtship behaviour (see *The Handbook*, vol. iv, p. 169) and this could also be true of the European Whimbrel, though there appears to be very little information concerning the courtship of this bird. On the other hand, the Asiatic Whimbrel, *variegatus*, would appear to provide a morphological link, having the white rump boldly barred with brown, and there appears to be no difference in general behaviour and voice. For the present, therefore, it is best to regard the American and European birds as conspecific, with the very slightly differentiated *islandicus* synonymous with the nominate race; but a critical study and comparison of the courtship behaviour of the Old and New World forms would be of great theoretical interest to the problem of speciation.

Bent records an occurrence of the Hudsonian Whimbrel in Iceland in 1854, on the authority of Kjaerbølling, and Dresser (1895-96) says Lord Lilford obtained one in the Coto de Doña, Spain, on 3rd May 1872. These appear to be the only previous European records, though the bird is casual in Greenland.

REFERENCES

- BENT, A. C. (1929): *Life-histories of North American Shore-birds*. Bull. 146 of Smithsonian Inst., U.S. Nat. Mus. Washington.
- DRESSER, H. E. (1895-6): *Supplement to the Birds of Europe*. London.
- FORBUSH, E. H. and MAY, J. B. (1939): *A Natural History of American Birds of Eastern and Central North America*. Boston.
- PETERSON, R. T. (1947): *A Field Guide to the Birds*. Boston.
- SALOMONSEN, F. (1935): Aves. Pt. LXIV, *Zoology of the Faroes*. Copenhagen.

MIGRATIONAL DRIFT AND THE YELLOW WAGTAIL COMPLEX

BY KENNETH WILLIAMSON

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INTRODUCTION

FROM time to time grey-headed yellow wagtails which appear to be identical with Sykes's Wagtail (*Motacilla flava beema*) of western Siberia have been observed or captured in the British Isles. The frequency of their appearance has puzzled ornithologists and in the absence of a more satisfactory explanation of their origin they are now generally regarded as aberrant examples of the typical race, the Blue-headed Wagtail (*Motacilla f. flava*) of middle Europe, or even of the British Yellow Wagtail *flavissima*. The current view is reflected in the decision of the late British Ornithologists' Union List Sub-Committee to consider such specimens as belonging to the race *flava* (*Ibis*, vol. 92, pp. 140-141) so that in consequence *beema* has failed to find a place in the *Check-list of birds of Great Britain and Ireland* (1952).

The fashion of regarding such birds as variants or mutants of *flava*, whilst it owes its origin to the work of Stresemann (1926), received a great impetus as a result of the policy of the Editors of *The Handbook of British Birds* (1941, vol 1, p. 215) and of the journal *British Birds* in the treatment of such records from 1935 onwards (see editorial note, *antea*, vol. xxix, p. 200). So far as this country is concerned, the seal of authority was placed on this theory by the writings of Harrison (1945), Tucker (1949) and Smith (1950). Stresemann's view is that mutants arise in the various yellow wagtail populations showing extraordinary convergences, so that birds very like each other may be found in widely-separated breeding-areas. That this is a common situation throughout the range of these birds is well-known, and Gladkov (1954), presumably writing from Russian experience, says: "There is to be noted a considerable overlapping of the areas of the separate subspecies and numerous occurrences in the depth of an area of one subspecies of specimens not distinguishable from another." Harrison sought support for Stresemann's view by plotting the cline of crown-colour against the east-to-west distribution of the birds, but there is no simple cline affecting all the races—as will be seen from the taxonomic survey below—and characters other than crown-colour are also involved in the variation. Tucker concluded his study with the remark: "The races of the yellow wagtail present some evolutionary problems of great interest and there is reason to believe that they are actually in a state of more than ordinary genetical instability." Smith (p. 113) expressed the same opinion. The view that this is

the case has gained, and now enjoys, a wide popularity; but there are a number of inconsistencies in the theory when the group is studied as a whole which leave one unsatisfied as to its validity, and invite a re-examination of the problem.

Before proceeding with this examination it is necessary to have a full picture of the nature of the variation within this extensive group, and of the summer and winter distribution of the different forms.

RELATIONSHIP AMONG THE YELLOW WAGTAILS

The yellow wagtails have been reviewed in recent years by Johansen (1946), who recognizes too many subspecies; by Grant and Maekworth-Praed (1952), who recognize too many species; and by Meinertzhagen (1954), whose analysis is more conservative but avoids discussion of the possible evolutionary trends within this complex assemblage of birds. Whereas Johansen, using quadrinomials, admits 22 forms, Meinertzhagen recognizes only 14 subspecies. Grant and Maekworth-Praed entirely ignore the new biological approach to taxonomy which has sprung from the work of Mayr (1942) and others, and raise no fewer than 7 species embracing 21 forms in all.

I cannot agree with Meinertzhagen that in this complex array we find "the reverse of normal variation in that it is not clinal" (p. 148), for there are regions in which primary intergradation is clearly discernable, although the most complicated situations are found in what appear to be "hybrid zones" of secondary intergradation. It is in these latter regions that, as he truly remarks, the variation is not always constant "owing to gene leakage or even gene-flow, which must be expected in a species which sinks its racial identity in its winter quarters". This last, as I shall attempt to show, has an important bearing on the question of variation as a result of the displacement of individuals on spring migration, but it is of much less importance, of course, than the intermingling of stocks which takes place over comparatively large areas within the total breeding-range.

Johansen offers a hypothesis of the development and spread of the various forms, regarding the yellow-headed populations as the most primitive, and the dark and blue-headed forms as derivatives of inter-glacial and post-glacial origin whose subsequent spread has confined the yellow-headed birds to somewhat restricted ranges. According to his theory, the yellow-headed stock was ousted from continental Europe by the southern ashy-headed series (*iberiae*, *cinereocapilla*) and the blue-headed *flava*, the latter also expanding eastwards into Siberia and culminating in Outer Mongolia in the White-headed Wagtail *leucocephala*. With this I would agree, except that I believe the ashy-headed series represents a secondary invasion of later date into the range of *flava*, springing from black-headed stock. The west Asiatic yellow-headed *lutea*, in Johansen's view, gave rise to the black-headed

complex, whilst the east Siberian green-headed *taivana* produced the northern and eastern grey-headed populations.

Gladkov departs from this view in considering that the Eastern Blue-headed Wagtail *simillima* belongs to the *flava-beema* series rather than to the group of northern populations; but the morphological likeness of *flava* and *simillima* is not necessarily a proof of close relationship, and the fact that *simillima* intergrades closely with its neighbours to the north and west establishes its identity with the grey-headed series, as I have attempted to illustrate below.

A completely satisfactory taxonomic study of these wagtails is made the more difficult because there are large tracts, particularly in Siberia, where very little is known concerning the breeding populations. There are in the British Museum (Natural History) comparatively few birds taken as breeders in this vast region, and one's study of the eastern populations is necessarily based to a large extent on material collected on spring migration, and in winter-quarters from India eastwards to China and New Guinea. This collection, however, is very extensive. Within so widely-distributed and varied an assemblage so poorly represented by known breeders, so-called "splitting" serves to obscure rather than emphasize the evolutionary processes which appear to be at work, and the plethora of names bestowed on eastern forms (often on the basis of one or two specimens) only serves to confuse the issue. I have found it best to follow Meinertzhagen in taking a conservative view, where possible using the concept of the cline as a means of reducing the number of acceptable forms.

Accepting the principle that the genus should indicate relationship, and the species distinctness, I see no reason for separating the Yellow from the Pied and White Wagtails in a different genus, *Budytes* Cuvier; on the other hand, I do regard it as a practical and desirable step to keep the yellow-headed group specifically distinct from the dark and blue-headed birds. The reasons for this will be discussed in detail later. Meanwhile, an examination of the large collection of specimens in the British Museum has led me to the following conclusions:

A. There are three widely separated populations of yellow-heads, completely isolated from each other as breeders, and each sympatric over the whole or a part of its range with one or more of the dark or blue-headed forms. They are located on the maritime fringe of Europe, the Kirghiz Steppes region, and far eastern Siberia. Hybridization with neighbouring forms occurs, but appears to be very rare.

B. There are three major groupings of dark or blue-headed birds with a much wider continental distribution. Within each of these groups there is a considerable geographical variation, due in part to a clinal change in characters, and in part to the phenomenon of secondary intergradation where

the borders of two of the major groups overlap. These occupy (1) the western and central Palaearctic, (2) the northern and eastern Palaearctic, extending to Alaska, and (3) the south-central Palaearctic, extending to the Mediterranean region.

GROUP A—YELLOW-HEADED POPULATIONS

Motacilla lutea lutea (Gmelin).

Typically most of the crown and forehead are yellow, but in many the crown is greenish-brown, with the yellow confined to the forehead. In a small minority the forehead also is greenish-brown. Complete yellow eye-stripe. Ear-coverts yellowish-green. Mantle bright greenish-brown but often darker, and in this as well as the head-characters many are quite indistinguishable from *M. l. flavissima*.

Volga River eastwards across the Kirghiz Steppes to the head-waters of the Yenesei, reaching the shores of the Caspian and Aral Seas. Winters mainly in East Africa.

NOTE: Rarely, interspecific hybrids with *M. f. bcema* are found (" *Budytes perconfusus* "); less rarely, hybrids with *M. f. superciliaris* (" *Motacilla xanthophrys* ").

Motacilla lutea flavissima Blyth.

Typically, the forehead only yellow, the crown and mantle greenish-brown, the latter not usually so bright as in the nominate race. Yellow eye-stripe. Many of the more intensely coloured specimens are quite indistinguishable from *lutea*.

Britain (rare north of the Clyde and probably not now in Ireland) with isolated "pockets" on the west and north coasts of France, Holland, Heligoland and Jaeren (Norway). Winters mainly in west Africa, south of the Congo.

NOTE: Rarely, interspecific hybrids with *M. f. flava* are found (" *Budytes perconfusus* ").

Motacilla lutea taiwana (Swinhoe).

Crown and mantle uniform greenish-olive. Complete yellow eye-stripe. Ear-coverts vary from dark brownish-olive to almost black. Chin often white, though usually yellow. ♀ similar but duller in coloration.

Upper and middle Lena River west of Lake Baikal eastwards to the Sea of Okhotsk and the Amur River; Sakhalin and the Kurile Islands. Winters in Burma, south China, Formosa and the Indo-Australian Archipelago.

GROUP B—DARK AND BLUE-HEADED POPULATIONS

(1) Central Palaearctic Group.

Motacilla flava flava Linnaeus.

Crown and nape blue-grey or lavender, getting paler towards the east of the range. Complete white eye-stripe. Ear-coverts grey or brown, and usually flecked with white. Chin very often white.

South-east England (more rarely other districts) and across mid-continental Europe, between about 45° and 60° N., east to the Ural Mountains. Winters over most of Africa south of the Sahara Desert.

NOTE: Rather variable; thus Gladkov says, "... almost everywhere are to be found individuals with a poorly-developed superciliary stripe, with darker ear-coverts, transitions towards the northern subspecies and Black-headed subspecies, and frequently one finds changes in the direction of the eastern *bcema*—i.e. birds with lighter heads." Kleiner (1933) also comments on this variability. Owing to primary intergradation with *bcema* the eastern limit cannot be defined; Grant and Mackworth-Praed say, "where the two meet, specimens may be placed in either." Secondary intergradation takes place with *thunbergi* in the Baltic States and northern Russia where their ranges impinge, and with *cinereocapilla* and *iberiae* in southern France. The first is discussed by Grant and Mackworth-Praed, p. 264; by Gladkov; and by Meinertzhagen, p.

151, who says, "A belt between 60° N. and 58° N. contains true *M. f. flava* and *M. f. thunbergi* and intermediates." Evidence for the second is provided by Mayaud (1949). In the east, a more permanent hybrid zone with *M. f. feldegg* has been established, resulting in the form known as *M. f. dombrowskii*. Interspecific hybridization with *M. l. flavissima* occurs very rarely.

Motacilla flava beema Sykes.

Crown and nape paler blue-grey than in *flava*. Complete white superciliary stripe. Ear-coverts grey or brown, often with white feathers. Chin white; in many a white line underlining the ear-coverts.

Eastern side of the Ural Mountains and the Caspian Sea across the Kirghiz Steppes to the Upper Yenesei and Lake Balkhash. Winters mainly in India, some in east Africa.

NOTE: This form intergrades imperceptibly with *flava* in the west and perhaps more abruptly with *leucocephala* in the east. I think *M. f. superciliaris* is very likely a product of secondary hybridization between *beema* and *feldegg* and the eastern examples of "*Budytes perconfusus*" are interspecific hybrids *beema* × *lutea*.

Motacilla flava leucocephala Przewalski.

Typically the head is more or less white with some grey shading on the hind-crown and ear-coverts, and a pale grey band across the nape. Complete white eye-stripe, obscured in really white-headed birds. Chin and line below ear-coverts white. Sexes alike.

Outer Mongolia, so far as is known. Winters in India, rarely in Africa.

NOTE: Primary intergradation with *beema* is so complete that it is clear the range must be more extensive than is at present known. Perhaps connected with *beema* through east Khazakstan.

(2) Northern and eastern Palaearctic group

Motacilla flava simillima Hartert.

Crown and nape dark blue-grey. Complete white eye-stripe, varying in width, occasionally slightly reduced before the eye. Loes black. Ear-coverts blackish, but sometimes as grey as crown, and occasionally with a few white flecks. Many have a tinge of yellow in the eye-stripe and a greenish flush on the crown. Chin, upper throat and a line beneath the ear-coverts white, but in a few there is no white even on the chin. The female is similar, a little duller beneath, and with the brown pectoral markings more pronounced, the head and ear-coverts a little browner. First-winter birds are very similar to those of *M. citreola*—for distinctions, see Williamson and Ferguson-Lees (1955).

Kolyma River east to Kamchatka and Sea of Okhotsk and the northern Kuriles. Winters India, Burma, south China and Indo-Australasian archipelago.

NOTE: The western limit cannot be clearly defined as this bird intergrades with the form having a narrow or rudimentary superciliary stripe which I have called *zaissanensis*, and through which it is ultimately connected with *thunbergi*. In north-east Siberia it must also intergrade with *tschutschensis*.

Motacilla flava tschutschensis (Gmelin).

Like *simillima* but smaller, head duller and suffused with brown, and mantle also more brownish in tone. Complete white eye-stripe. Loes and ear-coverts varying from dark brown to black. Under-parts slightly duller yellow and with a pectoral band of brown spots rather fully developed, and often with brown markings on the sides of the throat. Chin and a line under the ear-coverts white. Five adult ♀♀ from St. Michael's, Alaska, are no different from seven adult ♂♂ from the same locality; the wing-length of these birds, both sexes, is 76-81 mm.

Western Alaska, the Chuckchee Peninsula and Anadyr district. Winters in the Philippines, Dutch New Guinea and Java.

NOTE: In Alaska, where it is isolated, this is a very distinct form; in north-east Siberia it must intergrade with *simillima*.

Motacilla flava thunbergi Billberg.

Crown and nape dark blue-grey, in occasional specimens blackish or admixed with black feathers. Typically without an eye-stripe, but occasionally with a vestigial white streak behind the eye. Lores and ear-coverts (and occasionally the surrounding feathers) blackish, contrasting with the crown, although in some the ear-coverts are no darker than the crown. Chin often white, with or without a white line extending beneath the ear-coverts. Breast often with some indication of the pectoral band. Females duller, almost always with some indication of an eye-stripe (Southern, 1937).

Scandinavia north of about 60° N. across Russia, south to Esthonia, and eastwards through Siberia to Transbaikalia, eastern Mongolia and Manchuria, south of the ranges of *zaissanensis* and *simillima*. Winters in Africa, India, Burma, Malay Peninsula, south China and other parts of south-east Asia.

NOTE: Towards the east there is a cline involving the development of an eye-stripe, lengthening of the hind-claw, an increase in similarity between the male and female plumages. Intergradation with *zaissanensis* is complete. This form meets and interbreeds with *flava* (see under that form) in the Baltic States and north Russia. *M. f. macronyx* Stresemann 1911, is said to have a darker mantle and a longer hind claw, but specimens agreeing with this diagnosis can be found in Europe. *Budytes thunbergi alakulensis* Grant and Mackworth-Praed 1949 is founded on only two specimens (one of which is a November ♀ from the Yangtse River!) and has head "rather darker, more coal black," but this too falls within the range of individual variation and one such bird in the Dresser collection was taken at Oslo, Norway, in May 1870.

Motacilla flava zaissanensis (Poljakow).

Crown and nape dark blue-grey. Narrow white eye-stripe, often not present in front of eye. Lores and ear-coverts varying from dark grey to black. A greater proportion of adults, especially ♀♀, have an indication of the pectoral band than in *thunbergi*. Female similar to male, but slightly duller.

North central Siberia. Winters from India across south-east Asia to south China and Indo-Australasian archipelago.

NOTE: This is a poor intermediate race and shows all the variability one would expect from a region of primary intergradation linking western *thunbergi* and eastern *simillima*. Its limits, both breeding and wintering, are impossible to define. If a name is given to this assemblage at all it would seem that *Budytes zaissanensis* Poljakow 1911 is the earliest available for a bird from this region having a narrow white eye-stripe. *Budytes plexus* Thayer and Bangs 1914 and *Budytes angarensis* Sushkin 1925 are synonyms. In dealing with the birds across this vast area of Siberia and Manchuria, Grant and Mackworth-Praed accept as species *Budytes thunbergi*, with races *macronyx* and *alakulensis*, and *Budytes flavus* represented by races *simillima*, *tschutschensis*, *zaissanensis*, *plexus* and *angarensis*. I can find not the slightest evidence in the material I have examined that the central Palaearctic group has invaded the range of the northern-and-eastern group, or vice versa.

All those restricted to *zaissanensis* by Grant and Mackworth-Praed when they reviewed the British Museum collection are in heavy moult and it is impossible to be sure what they are; but the indications are that they will be no different from *simillima* in most cases. Those identified with *plexus* are like *simillima* except that the supercilium is narrower and restricted to behind the eye; the ear-coverts are generally coloured as the crown and are flecked with white; the chin is often white, and occasionally there is a yellowish tinge in the supercilium, as with some *simillima*.

(3) South-central Palaearctic and Mediterranean group

Motacilla flava feldegg Michahelles.

Glossy black head, including lores and ear-coverts, the crown sometimes washed with greenish. No eye-stripe, but sometimes a white line under the

ear-coverts and white chin. Mantle often more brownish in tone than *flava* and under-parts a stronger yellow, occasionally with some orange. First-year males have the pectoral band well defined and heads similar to typical *cinereocapilla* from Italy, but admixed with a few black feathers and with slightly darker lores and ear-coverts. Females have the gorget indicated, eye-stripe very slight (if any), sometimes a number of black feathers in the crown. Ticehurst and Whistler (1932) and Harrison (1933) discuss the variation.

Southern Dalmatia and Yugo-Slavia, the whole of Bulgaria and Greece through northern Asia Minor to the Caucasus and the western shores of the Caspian Sea. Winters mainly in east Africa.

NOTE: See under *M. f. dombrowskii*. There is in the Dresser collection a remarkable individual variant, a male from Amritsar, India, 31st March 1872 (W. E. Brooks), with the upper-parts typical but the underside entirely orange-buff.

Motacilla flava superciliaris (Brehm).

Completely black head in some, but greyish on hind crown and/or nape in others, and often with a greenish-yellow wash on the crown. Complete white eye-stripe, occasionally tinged with yellow. Chin white or yellow.

Aral-Caspian region east to Lake Balkhash. Winters mainly in India, some in east Africa.

NOTE: There is a good deal of individual variation in this form which, I suggest, has probably evolved as a result of recent secondary intergradation between *feldegg* and *beema*. "*M. xanthophrys*" Sharpe 1885, with a yellow superciliary stripe, is surely an interspecific hybrid *lutea* × *superciliaris*.

Motacilla flava dombrowskii (Tschusi).

Crown and nape dark grey. Narrow white eye-stripe, usually complete but often reduced or even absent before the eye, and occasionally with a slight yellowish tinge. Ear-coverts as crown, but darker in many, and in some as blackish as the lores. Under-parts occasionally as orange-yellow as in *feldegg*.

Southern Poland south of the Danube mouth and eastwards across southern Russia to the Volga River. Winters in east Africa.

NOTE: This is not a very stable form and the variation, together with its narrow zone of distribution between *flava* and *feldegg* suggests an old-established zone of secondary intergradation between these two forms. Meinertzhagen (1954) says that *flava* and *dombrowskii* interbreed in the Pripet Marshes.

Motacilla flava cinereocapilla Savi.

Crown ashy-grey. Narrow white eye-stripe in some, but absent in others or confined to a short streak behind the eye. Ear-coverts as crown or slightly darker. Chin and throat white, the latter washed with yellow in some.

Sicily, Italy, southern France as far west as the Pyrenees. Hartert (1910) extends the range eastwards to Montenegro. Winters in east Africa.

NOTE: It is here suggested that this and *iberiae* are the products of secondary invasion by *feldegg* stock of the European continent on the southern perimeter of the range of *flava*; young male *feldegg* have a basic head-pattern very similar to *cinereocapilla*, and the similarity of some *dombrowskii* to *cinereocapilla* is marked. The Ashy-headed Wagtail meets the Spanish race in the south of France and intermediates occur, and in this region both intergrade with *flava* (Mayaud, 1949; Meinertzhagen, 1954).

Motacilla flava iberiae Hartert.

Similar to *cinereocapilla* but with a more complete narrow eye-stripe, though occasionally this is lacking in front of eye. As in the terminal race at the north-eastern end of the total range—*tschutschensis*—the pectoral band is well-defined in both sexes. Ear-coverts as crown or darker. Chin and throat white, sometimes as far down as the breast-band. Female similar but duller.

Spain, Portugal, southern France to the Camargue, the Balearic Islands and Morocco. Winters in North Africa.

NOTE: See under *cinereocapilla*.

Motacilla flava pygmaea (Brehm).

Similar to *cinereocapilla* but smaller (wing 72-79 mm.). With or without an eye-stripe; in some a white streak behind the eye. Chin and throat white or yellow. Often with a greenish suffusion on the crown. Females duller, faintly yellow beneath, and with pectoral band.

Egypt, where it is resident.

THE "GENETICAL INSTABILITY" THEORY

With the foregoing survey to guide us we may now embark upon a consideration of the "convergence" or "genetical instability" theory.

It is interesting and remarkable that, while "mutants" resembling the pale blue-headed *beema* have been most often observed within the restricted breeding-range of *flavissima*, birds which are often quite indistinguishable from *flavissima* occur as a widespread and well-established form over the range of *beema*. Moreover, this yellow-headed form infiltrates the eastern boundary of *flava* and the northern boundary of the black-headed group (Hartert, 1910). Following the lead given by Stresemann, Grote (1937) described this form as "var. *lutea*", taking the view that it is a mutant which has arisen in the *beema* population and will eventually replace it. Johansen, on the other hand, believes that *beema* is the younger form and may eventually replace the older *lutea*.

Following Grote, Smith called this bird "*M. flava* var. *lutea*", since it "has no separate range of its own", but is always found alongside one or other of the pale grey or black-headed forms mentioned above. "Possibly we have here an example of true diversification," he writes (p. 108), "as in various herons, owls, etc., where two sharply contrasting forms or phases co-exist within the same inter-breeding group," presumably with a balance of selective advantages between the two. However, the peculiar distribution of this yellow-headed bird with relation to the other markedly dissimilar forms whose ranges overlap its own, and the fact that it tends to segregate from grey-headed birds on passage in Africa (Wallace, 1955) do not suggest a simple case of polymorphism. The true nature of *lutea* will be discussed below.

Furthermore, it has been noted by Buturlin and Dementiev (1934) that birds identical with the white-headed population of Outer Mongolia also occur within the area occupied by *beema*. These, according to Smith, should again be regarded as individuals obeying Stresemann's rule, arising by spontaneous mutation in the *beema* stock. That *beema* should regularly throw up mutants showing convergence with two widely-differentiated and widely-separated forms, *leucocephala* and *flavissima*, is surely strange. This *leucocephala* has had varied fortunes: Dementiev (1935) regarded it as a mere variety, being too rare and of too paradoxical a distribution to be a geographical race. Grant and Mackworth-Praed went to the other extreme and raised it to full species level because "the specimens we have examined have

a remarkably close resemblance to each other and it should be noted that the sexes are alike." There is, however, every conceivable stage of primary intergradation with *beema*, and on the latter criterion one would also have to raise *tschutschensis* to species level. Johansen regards *leucocephala* as the end-point of the European invasion, derived from *beema* through the elimination of alleles controlling the head-colour, and the morphological evidence supports this view that it is one terminal of the central Palaearctic cline.

Tucker made the important point that the *beema*-like "mutation" which turns up at frequent intervals in England is a property of *flava* rather than of the native *flavissima*, since it occurs with the greatest frequency in south-east England, where birds resembling *flava* often breed, at least occasionally forming little closed communities (Ticehurst, 1907; Arnold, 1935; Gregory and Hale, 1942). The numerous notes which have appeared in *British Birds* and local reports (such as *The Sussex Bird Report*, 1948-53), several of which are listed in the bibliography, show clearly that it is in this south-eastern portion of the country that *flava* is most regular both as a visitor and a breeding-bird, and that here too the pale-headed "variants" are most often noticed. Tucker rightly regarded these *flava* as genuine immigrants from the Continent.

But what of those *flava*-type birds which are found breeding now and then in more distant parts of the country, such as Cornwall (23rd Ann. Rep. of Cornwall Bird Watching and Preservation Soc., 1953), Leicestershire (*antea*, vol. xxxviii, p. 157), Oxford (Tucker, *op. cit.*, p. 194) and Cheshire? In the last case Smith (1942) recorded *flava*-type females mated with *flavissima* males, and Tucker commented: "It can scarcely be doubted that here an indigenous population is producing variants among the females (though apparently, and rather oddly, not among the males) resembling the Continental race." The inference appears to be that whilst *flava* (but not *beema*!) males breeding in Britain are to be regarded as genuine immigrants, *flava*-type females arise in the local population by "spontaneous mutation".

There are some other anomalies, but they can be explained on taxonomic grounds. In the Carpathian Basin, *beema*-like birds are to be found admixed with the native *flava* (Kleiner, 1935), and these also have been regarded as mutants. But there appears to be an extensive area of overlap, especially towards the east of the range, between *flava* and *beema* types, and the variability of this population has been emphasized by several authors, including Gladkov. Birds similar to *thunbergi* have been found breeding within the range of *flava* in the Baltic States (see Johansen), east Prussia (Tischler, 1941), just to the north of Stockholm (Armington, 1949) and in north-west Russia (see Gladkov). This situation has its parallel in the south of France along the common boundary of the typical and the Mediterranean races

(Mayaud, 1949), and is most reasonably interpreted as secondary hybridization. In Albania the Black-headed Wagtail produces "variants" resembling *thunbergi*, a form breeding hundreds of miles to the north across the range of the typical race, and intermediate types also occur (Ticehurst and Whistler, 1932). This is in the region occupied by the variable *dombrowskii*, which, when lacking an eye-stripe, is not unlike *thunbergi*. There seems no reason to doubt that this *dombrowskii*, as noted by Johansen and agreed by Smith, is a product of secondary intergradation between black and blue-headed forms once isolated, but insufficiently long for ecological compatibility to develop.

Finally, no explanation has yet been given as to why the "genetical instability" is most marked in western Asiatic and European forms, and is either excessively rare or absent from the extreme north, south and east. The Egyptian *pygmaea* appears to be perfectly stable, nor is there any evidence that *thunbergi* and the eastern Asiatic forms produce "mutants" showing convergence with European birds. Such variation as there is in the east has already been dealt with in detail in the taxonomic survey and it appears to follow the pattern of clinal change. Nor is it apparent why this "instability" should be the sole property of the *flava* group, and is not shared by the closely-allied *alba* group. There are a number of eastern races of *alba* with well-marked characteristics affecting head-pattern and mantle colour, but similar birds are never produced by the *alba* wagtails of Europe. The solitary eastern bird, the Masked Wagtail (*M. a. personata*), recorded from the British Isles, has always been accepted as a genuine vagrant and never attacked on the grounds that it could be a "mutant" Pied (*M. a. yarrellii*). Apart from Tucker's assertion (*op. cit.*, p. 194) that many of the White Wagtails recorded as nesting in Britain must be pale-backed "mutants" of the native Pied, the credentials of this group have always been regarded as inviolate.

The "genetical instability" theory must remain not proven until such time as its exponents can offer a convincing explanation of the many anomalies revealed by this interpretation of the complexity of the yellow wagtail group, and can cite similar situations in the genetical history of other animal forms. It seems unbelievable that the situation could be exclusive to one species only, and there are grave and obvious dangers in accepting the theory as an explanation for so-called "convergence" of this kind. The principle could be evoked at any time to suppress a record of a vagrant of a distant subspecies on suspicion that it was a spontaneous "variant" which had arisen in the corresponding indigenous form, or in some other less remote population, and its general application would lead to great uncertainty and confusion in faunistic, taxonomic and migration studies.

AN ALTERNATIVE VIEW

Modern studies in migration afford an alternative hypothesis

that is biologically sound and provides an entirely adequate and natural explanation of the kind of "convergence" we come across so frequently in the western Palearctic wagtails. Neither this alternative nor the current view is capable of formal proof, at present at any rate, and in the following argument I am merely concerned with opposing what seems to me a most unlikely and even dangerous theory by one which is in line with recent migration discoveries, and agrees well with the existing ethnological and taxonomic evidence. The principal factor concerned is that of migrational drift down-wind across an inhospitable zone, such as a sea or desert, and even across continents under special meteorological conditions. The theoretical and observational aspects of this phenomenon have been discussed at some length in a number of previous papers (Williamson, 1952, 1954 and in press). Secondary factors which play a large part in conjunction with this phenomenon are the essentially similar biology and behaviour of the yellow wagtails, their readiness to mix indiscriminately in winter-quarters and on migration, and the apparent significance of the head-colour as a recognition character in the yellow-headed and the greyish-headed birds.

These characteristics lead to what has been called "migrational drag", extra-limital vagrants to an area being carried along by the stream of migrants appropriate to that area; and a few of the ornithologists who have been kind enough to criticize this paper have emphasized their belief that "drag" alone could account for the unusual amount of vagrancy shown by the yellow wagtails. The importance of this phenomenon is very great, as Meinertzhagen (1954) has indicated; but it cannot be the sole or even the chief cause of such vagrancy. If it were, one ought to find the same heterogeneous mixture of wagtail races in the Rhône Valley as in the Fayoum, but manifestly the great majority of migrant wagtails eventually break up into their appropriate groups and "home" to their native areas. The fact that so many geographical races exist is proof enough that "migrational drag" affects only few, and it is reasonable to suppose that these are the lost birds which have previously sustained a drift across desert or sea.

Much of yellow wagtail migration takes place during the day, though nocturnal movements are not unknown: Meinertzhagen describes the departure of flocks at sundown in Arabia, and it may be that migration in arid regions is nocturnal because day-travelling flocks cannot feed as they go, as when moving along lakesides and river valleys. There is abundant evidence of large mixed flocks concentrating at various points, such as Lake Victoria Nyanza, or moving along certain "routes" such as through the Sudan and the Fayoum along the Nile valley. Such mixing has been described by many authors, notably in recent years by Meinertzhagen, K. D. Smith (1955) in Eritrea, and Wallace (1955) in Kenya. The various forms travel and feed together, often in association with herds of cattle, and Smith records that

no fewer than six forms have "huge communal roosts in the centre of Asmara, pouring in from all quarters of the compass at dusk". He says (*in litt.*) that he has seen the same communal roosting in mangrove swamps on the coast in spring, though they were not so large as the Asmara one. One migrant flock of a hundred wagtails seen by Wallace in the Meru district of Kenya at the end of March contained adult males representing no fewer than six different forms; in some areas, however, he observed a tendency for the yellow-headed birds to concentrate on dryer ground.

H. G. Alexander (*in litt.*) has much the same story from the Delhi district of India, which he summarizes: "A number, chiefly *beema*, winter. The northward passage of *beema* begins in early March and continues till mid-May, but most pass before mid-April. *Thunbergi* migrates later, and after about 20th April the majority are of this race. Frequently the two races occur in the same flock. *Superciliaris* is an infrequent passage-migrant, occurring from mid-March to mid-April: sometimes it is seen separately from other *flava* wagtails, sometimes in company with others. On 30th April 1951 several individuals were identified as *simillima*: these were either in company with, or (3 birds) within a hundred feet of a flock of some 40 birds, chiefly *thunbergi*."

Since such mixing is a regular feature of spring migration, the stage is already set for the arrival in certain breeding-areas of extra-limital forms, given circumstances which cause deflection from their normal route. It is clear, for example, that the not infrequent appearance of the White-headed Wagtail farther west than usual, within the range of *beema* proper, could be due to migrants joining up with *beema* flocks and travelling with them after getting a westwards drift across the mountainous or desert country of central Asia: there is no need to ascribe such vagrancy to "spontaneous mutation" resulting from "genetical instability" in the *beema* stock. That this situation could also happen in reverse, on the autumn migration, is implicit in the very rare African records of the White-headed Wagtail (at Kanyani, Northern Rhodesia, *Jour. Afr. Orn. Union*, vol. 2, p. 92 (1906); also one specimen very near to *leucocephala* in the British Museum, from Karonga, Nyassaland, 26th March 1947). Such African winterers, on northwards migration in spring, might conceivably drift westwards into Europe, as instanced by the occurrence of *leucocephala* in the British Isles.

For the many races returning from Africa to Europe and the Near East, drift over the Mediterranean Sea is undoubtedly the principal factor accounting for the displacement of individuals, and as an example of what may happen it is only necessary to quote H. G. Alexander's (1950) charming observation of "six of the possible five" yellow wagtail races resting on board a vessel in the eastern Mediterranean! (He has since told me that one of these birds stayed on board for three days, and "flew off when we

were nearing Marseilles, just to add to the confusion in the Camargue!"). The important part played by drift in this maritime region is clearly shown by the not infrequent records of the Black-headed Wagtail well to the west of its normal range, as in Italy, Malta (Dresser coll., ♂ 19th March 1867), southern France (W. B. Alexander *et al.*, 1933), and of course the British Isles.

It is not only across seas and deserts that drift takes place. There is now much observational material to show that it is effected over vast continental areas under certain favourable weather conditions. In Britain the biggest spring influxes of passage-migrants, often embracing south-eastern rarities (as in 1954: see *antea*, vol. xlvii, pp. 127-9, 178) take place when there is an extensive col in central Europe between high pressure systems over the E. Mediterranean region and the Scandinavian peninsula—conditions establishing a fine-weather corridor of light southerly or south-easterly winds. In such circumstances we confidently look for such rarities at Fair Isle and along the eastern seaboard of Britain, together with "rushes" of north-bound birds of the commoner species (see *antea*, vol. xlv, pp. 248, 261; also Williamson and Butterfield, 1954), and this pattern of spring movement into Britain explains why there is a preponderance of rarities with an eastern rather than a southern or south-western origin. To give specific cases from among the wagtails, it is entirely due to the comparative frequency of situations of this type that our commonest vagrant wagtails in Britain are the northern *thunbergi* in Scotland and the more southerly *beema* in England; that the eastern *feldegg* has more records than the geographically nearer *cinnereocapilla*, and that even the distant *leucocephala* has occurred whilst *iberiae*, so far as is known, has not appeared at all. If "migrational drag" were primarily responsible for this vagrancy, then the reverse ought to apply.

The operation of trans-North Sea drift is evident from the fact that, as mentioned by Tucker (*op. cit.*, p. 194), in some years of *flava* immigration into Britain, one or other sex predominates. Males precede females by about ten days or a fortnight, according to Smith, and a preponderance of one sex over the other in England is therefore probable except in the extremely unlikely event of meteorological conditions conducive to drift across the Channel or southern North Sea falling evenly throughout the whole period of the migration.

The stability of *thunbergi* in its native area is explained on the views put forward above: there are no "variants" resembling distant races because no other wagtail (except the very distant *M. citreola*) migrates so far to the north. Moreover, on the evidence of Alexander its migration is later, so that most *flava* and *beema* have reached the end-point of their migration and have settled on their breeding-grounds when the Grey-headed Wagtail passes

through. Conversely *pygmaea* remains pure because it is non-migratory and is already nesting by mid-March (Simmons, 1952) when the other races move north. It is impossible to say much about the eastern races, for so few specimens have been collected on the breeding-grounds that the degree of vagrancy cannot be estimated.

Finally, collateral support for this alternative theory is provided by the situation in the *alba* group. The Pied and White Wagtails of western Europe do not show "genetical instability" because the first, *yarrellii*, is either sedentary or a partial migrant moving a comparatively short distance only, whilst the nominate race goes to Africa and returns through the British Isles at a time when the great majority of *yarrellii* are well-established on their nesting-grounds, and in many cases incubating eggs. It is mainly in the very north, where the breeding-season is correspondingly late, that occasional Pied \times White interbreeding is reported.

THE NATURE OF "VAR. LUTEA"

The British *flavissima* is known to winter in tropical West Africa as far east as Nigeria and the Upper Congo, largely along the fringe of the great Sahara desert. Birds which are indistinguishable from it have been collected, and are frequently observed, in Tanganyika and other parts of east Africa (Benson, 1946; Wallace, 1955; and others): Moreau (1937) and others consider that these specimens belong to the eastern "var. *lutea*" and have no connection with the British form, but Grant and Maekworth-Praed evidently take the opposite view, since they extend the wintering range of *flavissima* to southern Rhodesia. Whichever is the truth, there is no evidence that the British bird returns home via the west coast of the African continent, although this route is apparently used on the autumn journey (Smith, 1950). Dresser (1871-81) says that it is common in the Camargue in April, but adds that Col. Irby never saw it at Gibraltar. Payn (1948) notes that *iberiae* is the only wagtail in Tunisia and Algeria on spring migration. Smith gives evidence that *flavissima* is seen in numbers migrating northwards, in company with *flava*, through central France, but it appears to be uncommon in Spain and Portugal; the return route is not known with certainty, but he believes that it traverses the Sahara Desert.

If this is so, then the British bird must be exposed to the dangers of migrational drift over an inhospitable zone at the very outset of its journey. With the north-eastwards retreat from northern Africa in spring of the tropical continental air-mass source and its replacement by equatorial air, the main trend of the winds across the southern Sahara at this season is south-west. Drift in such an airstream would deposit numbers of *flavissima* from tropical West Africa on the Nile Valley route used by many of the grey-headed races and also by "var. *lutea*". Displacement

of this kind would bring many *flavissima* into contact with birds of "var. *lutea*", differing in no important particular from themselves, and could result in their continuing migration together. Continual recruitment in Africa of displaced *flavissima* may well have enabled "var. *lutea*" to hold on to its original ground despite the competition with (presumably) more recent forms which have penetrated the same area. It is much the most successful of the yellow-headed forms, its range extending across about 30 degrees of longitude.

Moreover, there is a wider variation in the head plumage of this "var. *lutea*" than in any of the other forms, and of the British Museum material from on and near the breeding-area in spring (this excludes all African specimens) a fair proportion of the individuals cannot be differentiated from *flavissima*. The more typical examples of *lutea* in breeding plumage have yellower heads and slightly greener backs than British males, and it may be that this divergent type represents the ancient stock. If there was now recruitment at intervals on spring migration, however, one would expect to find a wide variation with many specimens closely resembling the British type, since such incursions would tend to dilute the strong expression of this recognition-feature of a yellower head achieved by a population long established side by side with pale grey-headed and dark-headed forms.

It may well be asked why, if *beema* and even *leucocephala* reach so far west as the British Isles as drift-migrants, *lutea* does not now and then drift across the Mediterranean and through Central Europe in the same way. It is not at all unlikely that this does happen, and there are records of vagrants in Albania and Hungary (Ticehurst and Whistler, 1932; Csörrgey, 1929). Some British-taken wagtails have the yellow head unusually well-developed, and to which form they rightly belong is anybody's guess. Dresser is worth quoting in this connection: "I have figured (his plate 131) an old male with the yellow head from southern Russia, in which plumage it is called *M. campestris* by the continental dealers; but I may add that I have an old male from Hampstead, near London, in the same plumage, except that, if anything, the Russian specimen is a trifle cleaner and brighter in colour, though there is scarcely any difference between them. In this plumage the sides of the head and forehead, as far as the centre of the crown, are like the under-parts, rich canary-yellow, and only towards the hind-crown and nape does this colour gradually merge into green on the hind-neck and back. Donovan (*Nat. Hist. Brit. Birds*, i, pl. xv) figures a British-killed bird which is much more richly coloured than any south Russian example I have seen, the entire head and upper neck being rich canary-yellow." The revisers of the British Museum collection have placed with *lutea* a specimen, very greenish on the mantle and with a strongly-marked yellow forehead, which was shot at

Valencia in Spain on 10th April 1872—and I find it a curious coincidence that a typical *beema* in the same collection was also shot at Valencia on 7th April in that year!*

It has been stated in the Russian literature that in the zone from south Russia eastwards across the Kirghiz Steppes to Transcaspia selective mating exists and *lutea* and *beema* do not interbreed. Smith regards this as an improbable state of affairs; and Johansen, whilst admitting that some hybridization takes place, stresses that it is rare. If such interbreeding were at all common we should expect to find a large number of hybrid specimens in collections; that we do not seems to me strong evidence in favour of the Russian view, which has recently been stated again by Gladkov, that the grey-head and the yellow-head have achieved reproductive isolation. The east Siberian Green-headed Wagtail *taivana* is also said to occur in a mixed population with *simillima*, the two forms maintaining their distinctness. Here also the evidence of museum material collected on migration and in winter-quarters supports this contention.

Natural hybridization takes place as a rare event in a number of well-defined but closely-related species, and it is highly probable that occasional hybridization between *flava* and *flavissima* on the one hand, and *beema* and *lutea* on the other, does occur, but to a degree entirely insufficient to prejudice their claims to specific recognition. The remarkable distribution of the form recently given species rank by Grant and Mackworth-Praed as "*Budytes perconfusus*" (*op. cit.*, pp. 256, 263) on the basis of five adult males makes one inclined to agree with A. L. Butler (who collected two of the birds) and Johansen (1949) that this new "species", whose breeding-range the authors are confident will one day be revealed, is in fact an interspecific hybrid. These birds have the supercilium yellow, or mixed yellow and white, some yellow feathers among the grey-brown ear-coverts, and the blue-grey or lavender head washed with greenish-yellow to a varying degree. If this is indeed a good species, with an undiscovered breeding-range, then surely this range must be very restricted: yet the distribution of the known specimens on which this species has been based is 3 Sudan, 2 Abyssinia, 2 Arabia, 1 Pomerania, 1 Denmark and 1 Holland. There is another from Muddapur, India, in the British Museum (28th October 1878, Hume coll.); Meinertzhagen mentions a Hungarian specimen which was recorded by Almasi, in *Orn. Jahrb.* (1898) as *taivana*, and there is a good sight-record from Pett Level, Sussex (*Sussex Bird Report* 1952, p. 10).

In the same way there seems little doubt that the yellow-eyebrowed bird called *M. xanthophrys* by Sharpe—of which there is a very fine coloured plate in Dresser, vol. 9—is an interspecific hybrid between *lutea* and the white-eyebrowed *superciliaris* which

* Grant and Mackworth-Praed accept this *beema* as a true vagrant (p. 258), yet deny similar status to the British specimens!

shares part of its range. In the British Museum there is a unique grey-headed female with yellow chin and a narrow yellow eye-stripe, collected by H. L. Popham on the Yenesei on 21st June 1897, which is perhaps a hybrid between *taivana* and *zaissanensis*.

CONCLUSIONS

If we accept the biological importance of the head-colour (and it is evident from the relationship of the yellow-headed and grey-headed groups) then it is not difficult to understand how a mixing of *beema* and *flava* types could take place, and be maintained, during the northwards migration, with the result that *beema* individuals would appear as occasional wanderers and potential breeding-birds within the range of *flava*, in regions so widely separated as Spain, Hungary, Heligoland*, Fair Isle, and England. Nor is it difficult to understand why *beema*, when it appears in the British area, nearly always does so in association with its close ally *flava* in the south-east of England, and is not admixed with the yellow-headed *flavissima* in more distant places, as Tucker pointed out. A similar situation to this may well exist over much of Europe between Britain and Hungary, but there are two good reasons why it should be most marked in the west: firstly, as I have shown, the continental anticyclone ensures that the bulk of the drift shall be from east to west; and secondly, continental observers are more widely scattered and much less "variant-conscious" than observers in south-east England!

It is seen, in the light of the above arguments, that this group of birds is probably no more unstable genetically than any similar assortment of Passerine birds, and is therefore equally capable of orthodox taxonomic treatment. The mixing of dissimilar forms on the breeding-grounds is not due to "convergence" resulting from "spontaneous mutation" in indigenous stocks, but to natural drift vagrancy such as we find in all other migratory species, accentuated by "drag"; or to the familiar phenomenon of allopatric hybridization of contiguous forms; or to rare cases of interspecific hybridization between sympatric yellow-headed and grey or dark-headed populations.

The occurrence of two exceedingly similar forms, *lutea* and *flavissima*, in such widely separated breeding-areas as the Kirghiz Steppes and the British Isles is unusual, but not unique. Laek (1946) has shown that the Robins (*Erithacus rubecula*) of the Azores, Madeira and west Canary Islands are almost if not entirely indistinguishable from birds of the typical race inhabiting the greater part of the European continent with the exception of the extreme west, where distinct forms intervene. This situation may have a somewhat similar history to the *flavissima-lutea* case: namely, that Robins of the more migratory nominate race are planted in these Atlantic islands rather often as a result of migrational drift. That this species is exceedingly prone to drift

* G. Natorp, *Dm. Monatsberichte* (1924), 32.

down-wind in a westwards direction under certain meteorological conditions was abundantly illustrated at the beginning of October 1951, when a great invasion of eastern Britain took place (Jenkins, 1953; Williamson, in press). The lack of differentiation in these islands from Continental stock may be due to the fact that Robins have not been there very long, or because recruitment takes place sufficiently frequently (as I suggest is the case with *lutea*) that any insular tendency towards distinctness is swamped.

That drift can be a primary factor in opening up an entirely new breeding-range has been demonstrated recently in the case of the Fieldfare (*Turdus pilaris*) in Greenland (Salomonsen, 1951), and it is not unlikely that this is how the Cattle Egret (*Ardeola ibis*) first established itself in Central America (James Fisher, pers. comm.). It is probable that recurring drift and the consequent inability to establish a discontinuity in gene-flow account for the lack of clear-cut differentiation from Continental birds in some specimens of the Redwing (*Turdus musicus coburni*) of Iceland, and of the Faeroe Snipe (*Capella gallinago faeroeensis*) at its type-locality and in the same country (see *Ibis*, vol. 92, p. 639; vol. 93, p. 315).

Mayr, Linsley and Usinger (1953) recommend that populations which are in contact but do not interbreed freely, although occasional hybrids may occur, should be regarded as good species; and this is exactly the situation which is found in the yellow-headed and grey-headed or dark-headed groups of wagtails wherever they occur. Mayaud (1949) has drawn attention to the fact that although *flava* will interbreed freely with *iberiae* and *cinereocapilla*, birds with a not very dissimilar head pattern, where their ranges overlap in the south of France, no such interbreeding occurs between the more markedly distinct Blue-headed Wagtail and the yellow-headed *flavissima* on the channel coast, where he, Ingram (1926) and Meinertzhagen (1948) show that a number of *flavissima* "pockets" exist. Such groups have also been recorded in the Frisian Islands, on Heligoland and on Jaeren in south-west Norway (Bernhoft-Osa 1946, and Dr. H. Holgersen, pers. comm.) As mentioned earlier, where *flava* nests in southern England it is sometimes segregated, although breeding yellow wagtails may be close at hand (Gregory and Hale, 1942). The British bird thus appears to maintain its identity alongside the Blue-headed Wagtail just as *lutea* and *taivana* are reported to do alongside their neighbours in the east, and hybridization (and the conclusion that *Budytes perconfusus* is a hybrid seems inescapable) is rare. Taxonomically, therefore, one should regard the yellow-headed forms as comprising a distinct species, with *flavissima* and *taivana* as races of the nominate *Motacilla lutea*—an opinion formed by Sushkin (1925) and followed recently by Grant and Mackworth-Prad, and Gladkov.

THE BRITISH YELLOW WAGTAILS

Finally, if the views put forward in this paper should find

acceptance in place of the strongly entrenched "convergence" or "mutation" theory as an explanation of the complexity of the yellow wagtail problem, a list of those forms which have a claim to inclusion in the British List would read as follows

[*Motacilla lutea lutea* (Gmelin). Kirghiz Steppes Yellow Wagtail.

On the evidence given by Dresser, it has perhaps a claim to consideration as a vagrant.]

Motacilla lutea flavissima Blyth. British Yellow Wagtail.

Summer resident England, Wales and lowland Scotland; formerly as far north as Aberdeenshire and in Ireland.

Motacilla flava flava Linnaeus. Blue-headed Wagtail.

Summer resident in small and fluctuating numbers, mainly in south-east England, and a regular passage-migrant.

Motacilla flava beema Sykes. Sykes's Wagtail.

Occasional summer-resident in south-east England and scarce drift-migrant; once Scotland.

I have compared the following specimens at the British and Royal Scottish Museums and they are undoubtedly *beema*: Hampden Park, Eastbourne, Sussex, 5th May 1923, ex coll. E. C. Arnold (*Brit. Birds*, vol. xxix, p. 199 (1935)) in B.M.; Pevensey Marsh, Sussex, 20th April 1939, ex coll. Hugh Whistler, in R.S.M.; Fair Isle, 18th May 1910, det. by Dr. Ernst Hartert and Dr. W. Eagle Clarke (Clarke, 1913), in R.S.M. Other specimens obtained in Sussex, Kent and Norfolk are mentioned in *The Handbook of Brit. Birds*, vol. 1, p. 215, which also gives breeding-records to 1936. Since then a number of notices which appear to be referable to this race or to *beema-flava* intergrades have appeared in *Brit. Birds*, *Sussex Bird Rep.*, *Wild Bird Protection in Norfolk* and elsewhere.

Motacilla flava leucocephala Przewalski. White-headed Wagtail.

Very rare vagrant which has bred on one occasion.

This occurrence does not appear to have been published, yet the bird is in the British Museum and there is no doubt as to its identity. It is registered 1941.5.30.105, is part of the C. B. Ticehurst bequest and bears on the label: "Feeding flying young when shot by C. B. T. at Wittersham, Kent, 19.vi.1908. Considered by Dr. Hartert to be a worn variety of *Mot. fl. flava* vide litt." The races *flava*, *beema* (and also *leucocephala*) wear greyer on the head, never whiter; yet this specimen has the head completely white except for some grey feathering on the hind-crown and nape, the chin white, the ear-coverts faintly grey, and the hind-claw 85 mm. It is a very typical *leucocephala*. Smith (1950) mentions a wagtail with an almost white head seen by Mr. N. Stretch at Heywood in Lancashire.

Motacilla flava thunbergi Billberg. Grey-headed Wagtail.

Regular drift-migrant in spring, more particularly in northern isles; rare in autumn.

Motacilla flava simillima Hartert. Eastern Blue-headed Wagtail.

Very rare vagrant in autumn, Fair Isle (Williamson and Ferguson-Lees, 1955).

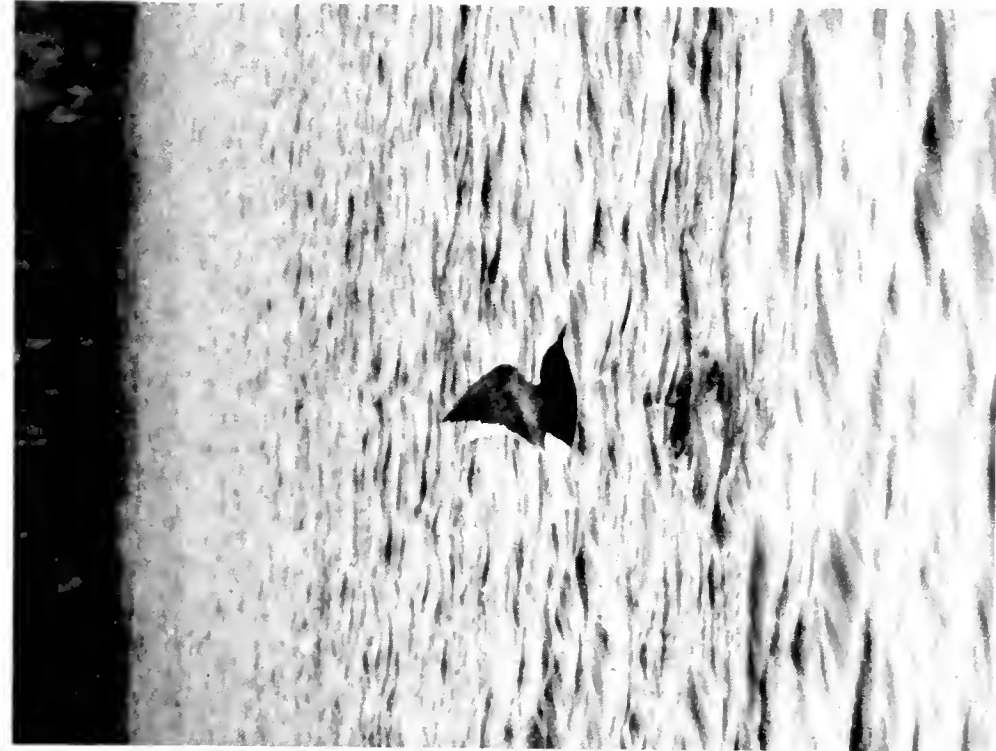
The occurrence at Fair Isle of two 1st-winter birds which match this race perfectly, ♀ 9th October 1909 and ♂ 25th September 1912, and a ♂ 4th November 1908 which is near to this form, is very remarkable; it is possible they reached western Europe by drift in the polar east-wind belt, as happens with east Siberian species in some years.



Allan D. Cruikshank

HUDSONIAN WHIMBREL (*Numenius phaeopus hudsonicus*): AMERICA

Unfortunately a photograph of a bird standing in this position cannot show the most striking feature of this very distinct race of the Whimbrel—the fact that the back and rump are coloured like the rest of the upper-parts. The plumage is otherwise very similar to that of the Whimbrel, except that the cheeks tend to be paler and the breast is spotted rather than streaked (see pages 379-381).



Howard Nicholls



White-winged Black and Black Terns (*Chlidonias leucopterus* and *niger*)
CITY, NORFOLK, MAY JUNE 1955

A comparison between these photographs shows that the White-winged Black Tern (left) has a shorter bill, a whiter tail, and a black instead of a grey under-wing, quite apart from the striking white "shoulders" which give it its name (see page 419).

R. P. Bagnall-Oakeley

WHITE-WINGED BLACK and BLACK TERNS (*Chlidonias leucopterus* and *niger*)
CLEY, NORFOLK, MAY/JUNE 1955

These photographs also provide useful comparisons between these two closely-related species, though the Black Tern, on the right, is not in breeding-plumage. The short bill and black under-wing of the White-winged species can again clearly be seen on the left.





Philip Wayne

WHITE-WINGED BLACK TERNS (*Chlidonias leucopterus*) CLEY, NORFOLK, MAY-JUNE 1955
On the left the characteristic black under-wing, short bill and white "shoulder" are all to be seen. On the right the dark upper-wing and under-tail coverts contrasting with the light grey and

Motacilla flava cinereocapilla Savi. Ashy-headed Wagtail.

Vagrant, once in Cornwall (Gould, *Birds of Gt. Brit.*, vol. III, pl. 5, 1873).

Motacilla flava feldegg Michahelles. Black-headed Wagtail.

Vagrant with four records in England and four in Scotland, all in spring.

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SUMMARY

1. The evidence that the yellow or *flava* wagtails are in an unusual state of "genetical instability", certain populations producing mutants which exhibit remarkable convergence with birds of other forms, shows certain anomalies and inconsistencies which invite a re-examination of the problem.

2. As a first step a taxonomic survey of the characters and distribution and of the probable relationship of the various groups is made.

3. It is suggested that the "convergence" or "spontaneous mutation" can be best interpreted as vagrancy resulting from migrational drift during the return from winter-quarters, consolidated by a readiness to mix on the part of the various forms, their close identity of migratory behaviour and biology, and the importance of the head-colour as a recognition character (so-called "migrational drag").

4. The yellow-headed "var. *lutea*", supposed by some authors to arise by "spontaneous mutation" in the grey-headed *M. f. beema* population of the central Palaearctic region, may receive increments from *flavissima* stock by recurrent trans-Saharan drift at the outset of spring migration, resulting in a mixed population in southern Russia of which a small part cannot be differentiated from the British bird.

5. Evidence that the yellow-headed *taivana* and *lutea* are syntatric with grey-headed forms, whilst *flavissima* and *flava* have a slight overlap in western Europe, the two groups maintaining their distinctness in each case, justifies the recognition of two species of yellow wagtails, *M. lutea* and *M. flava*. The characters and distribution of "*Budytes perconfusus*" suggest that this represents occasional hybridization between *beema-lutea* and *flava-flavissima* stocks. Similarly "*M. xanthophrys*" is an inter-specific hybrid *lutea* × *superciliaris*.

BIBLIOGRAPHY

- ALEXANDER, H. G. (1950): "Variant Yellow Wagtails." *Brit. Birds*, XLIII: 31.
- ALEXANDER, W. B., HARRISON, T. H., PEASE, H. J. R., and TUCKER, B. W. (1933): "Some spring observations on the birds of the Camargue." *Ibis* (1933): 521.
- ARMINGTON, S. (1949): "*Motacilla flava thunbergi* Billberg at Stockholm." *Dansk Orn. Foren. Tidsskr.*, 43: 92.
- ARNOLD, E. C., (1935): "Sykes's Wagtail as a British breeding-bird." *Brit. Birds*, XXIX: 199-200.
- BENSON, C. W. (1946): "Notes on the birds of southern Abyssinia." *Ibis*, 88: 25-48.
- BERNHOF-OSA, A. A. (1946): "Engelsk Gulerle, en ny Rugefugl for Norge." *Naturen*, 317.
- BROWN, D. H. and HARBER, D. D. (1948): In *Brit Birds*, XLI: 84.
- BUTURLIN, S. A. and DEMENTIEV, G. P. (1934): In "Syst. Avium Rossicarum." *Oiseau*, 4: 611.
- CLARKE, W. E. (1913): "On the occurrence of Sykes's Blue-headed Wagtail at Fair Isle." *Scot. Nat.* (1913): 153-154.
- CSÖRGEY, T. (1929): In *Aquila*, 24.
- DRESSER, H. E. (1871-1881): *The Birds of Europe*. Vol. 3, pp. 277-281; Vol. 9, pp. 147-149 and plate 664.
- DEMENTIEV, G. P. (1935): In "Syst. Avium Rossicarum." *Oiseau*, 1 (Reviewed in *Ibis* (1936): 615-617).
- GILMOUR, R. A. F. and JONES, N. G. B. (1950): In *Brit. Birds*, XLIV: 132.
- GLADKOV, N. A. (1954): In *The Birds of the Soviet Union*, vol. 5.
- GRANT, C. H. B. and MACKWORTH-PRAED, C. W. (1952): "On the species and races of the yellow wagtails from western Europe to western North America." *Bull. Brit. Mus. (Nat. Hist.) Zoology*, 1: 255-278.
- GREGORY, T. C. and HALE, J. R. (1942): "Varieties of Blue-headed Wagtails breeding in Kent." *Brit. Birds*, XXXVI: 112-113.
- GROTE, H. (1937): "Ueber *Motacilla flava mutatio lutea*." *Orn. Monatsber.*, 45: 162-166.
- HARBER, D. D. (1948-50): In *Sussex Bird Rep.*
- HARRISON, J. G. (1945): "Some remarks on the problem of Sykes's Wagtail in the British Isles." *Ibis*, 87: 69-72.
- and WIGGINS-DAVIES, W. W. (1951): In *Brit Birds*, XLIV: 131.
- HARRISON, J. M. (1933): "On the ornithology of Bulgaria." *Ibis* (1933): 516.
- HARTERT, E. (1910): *Die Vögel der palaearctischen Fauna*. Vol. 3: 2097. Berlin.
- and STEINBACHER, F. (1938). Ditto. *Erganzungsbund.*
- INGRAM, C. (1926): "Ouessant ornithology and other notes on French birds." *Ibis* (1926): 251.
- JENKINS, D. (1953): "Migration in late September and early October 1951." *Brit. Birds*, XLVI: 77-98, 121-131.

- JOHANSEN, H. (1946): "De Gule Vipstjerters (*Motacilla flava* L.)." *Dansk Orn. Foren. Tidsskr.*, 40: 121-142.
- (1949): "En aberrant Gul Vipstjert (*Motacilla flava* L.)." *Dansk Orn. Foren. Tidsskr.*, 43: 93.
- KLEINER, A. (1935): In *Kgl. Orn. Inst. Budapest*, 1-34. (Reviewed in *Ibis* (1935): 899).
- LACK, D. (1946): "The taxonomy of the Robin *Erithacus rubecula* (Linn.)." *Bull. B.O.C.*, 68: 18-33.
- MAYAUD, N. (1949): "The races of *Motacilla flava* breeding in France." *Ibis*, 91: 171-172.
- MAYR, E. (1942): *Systematics and the origin of species*. New York.
- , LINSLEY, E. G. and USINGER, R. L. (1953): *Methods and principles of systematic zoology*. New York.
- MEINERTZHAUSEN, R. (1948): "The birds of Ushant." *Ibis*, 90: 553-567.
- (1954): *The Birds of Arabia*. Edinburgh.
- MOREAU, R. E. (1937): "Migrant birds in Tanganyika Territory." *Tanganyika Notes and Records*, No. 4: 1-34.
- PAYN, H. (1948): "Notes from Tunisia and eastern Algeria, February 1943 to April 1944." *Ibis*, 90: 1-21.
- RIVIERE, B. B. (1935): "Sykes's Wagtail as a British Breeding-bird." *Brit. Birds*, XXIX: 268-287.
- (1941, 1950): In *Brit. Birds*, XXXV: 127-129; XLIV: 131.
- SALOMONSEN, F. (1951): "The immigration and breeding of the Fieldfare in Greenland." *Proc. Xth Int. Orn. Congr.*, pp. 515-526.
- SIMMONS, K. E. L. (1952): "Field-notes on the Egyptian Yellow Wagtail." *Ibis*, 94: 358-359.
- SMITH, K. D. (1955): "Recent records from Eritrea." *Ibis*, 97: 65-80.
- SMITH, S. (1942): "Field observations on the breeding biology of the Yellow Wagtail." *Brit. Birds*, XXXV: 186-189.
- (1950): *The Yellow Wagtail*. London.
- and RAMSDEN, W. (1948): In *Brit. Birds*, XLII: 86-87.
- SOUTHERN, H. N. (1937): "The supercilium of the Grey-headed Wagtail." *Brit. Birds*, XXXI: 101-103.
- STRESEMANN, E. (1926): "Anmeldelse af Domanjevskis ovennaevnte Arbejde." *Orn. Monatsber.*, 34: 59-61.
- SUSHKIN, P. (1925): "Notes on Palaearctic birds." *Proc. Boston Soc. Nat. Hist.*, 38: 31.
- THORPE, W. H. and THORPE, W. M. (1948): In *Brit. Birds*, XLI: 346.
- TICEHURST, C. B. and WHISTLER, H. (1932): "On the ornithology of Albania." *Ibis* (1932): 40-93.
- TICEHURST, N. F. (1907): "On the Yellow Wagtails and their position in the British avifauna." *Brit. Birds*, 1: 133-134.
- (1935): "Sykes's Wagtail as a British breeding bird." *Brit. Birds*, XXIX: 239-240.
- TISCHLER, F. (1941): *Die vogel Ostpreussens*. Königsberg and Berlin.
- TUCKER, B. W. (1949): "Species and subspecies: a review for general ornithologists." *Brit. Birds*, XLII: 193-205.
- VOOUS, K. H. (1950): "The races of yellow wagtail (*Motacilla flava*) wintering in the Indo-Australian archipelago." *Treubia*, 20: 647-656.
- WALLACE, D. I. M. (1955): "The mixing of the races of the Yellow Wagtail in Kenya." *Brit. Birds*, XLVIII: 337-340.
- WHITE, W. (1935): In *Brit. Birds*, XXIX: 240-241.
- WILLIAMSON, K. (1952): "Migrational drift into Britain in autumn 1951." *Scot. Nat.*, 64: 1-18.
- (in press): Migrational drift. *Proc. XIth Int. Orn. Congr.*
- and BUTTERFIELD, A. (1954): "The spring migration of the Willow Warbler in 1952." *Brit. Birds*, XLVII: 177-197.
- and FERGUSON-LEES, I. J. (1955): "Plumage and structural characters in the Yellow-headed Wagtail." *Brit. Birds*, XLVIII: 358-362.

SPECIAL REVIEW

By D. D. HARBER

THE BIRDS OF THE SOVIET UNION. Under the general editorship of G. P. DEMENTIEV and N. A. GLADKOV. (*State Publishers "Soviet Science"*, Moscow, 1951--54). 6 vols. (In Russian).

CONTENTS OF VOLUME 4 (1952; 640 pages)*

THIS volume covers the Galliformes and the Anseriformes, both orders being dealt with by more than one writer. Most of these birds have some economic significance as sources of human food or as providing feathers and skins. They likewise have a "sporting" interest. Doubtless it is for these reasons that many of them appear to have been studied by the Russians more thoroughly than have most other species. Certainly they are given more space in the present work. Thus the first species dealt with in this volume, the Willow Grouse (*Lagopus lagopus*), receives 20 pages for the nominate form alone and though not all are treated at such length the average number of pages per species is certainly higher in this than in the other volumes. Much more space is devoted to display which is sometimes illustrated by diagrams or drawings. Food is generally carefully analysed, great attention being paid to seasonal differences. New headings also appear for a number of species, such as "Enemies", "Winter Life", "Economic Importance" and, in the case of the ducks, "Regions where gatherings take place during moult". These last are also shown on the maps which often contain so much detail that, unlike most others in this work, they can scarcely be fully understood without a knowledge of Russian.

The volume starts with the Tetraonidae which are dealt with by A. V. Mikheiev except for the Capercaillic which is by S. V. Kirikov. Our Red Grouse (*Lagopus scoticus*) is considered a race of the Willow Grouse (*L. lagopus*) on the grounds that it replaces the latter geographically, that its biology is very similar and that it is linked to the latter by the Norwegian race (*L. l. variegatus*) which does not become entirely white in winter. The author is doubtful as to the validity of the various races of the Black Grouse (*Lyrurus tetrix*) which have been described, since individual variation in both size and plumage is considerable in this bird. But verification is not possible at present owing to a lack of material from central Siberia and the Far East. This species is declining in the south of its area owing to ploughing and the destruction of forests, but it is gradually extending its territory in the north as clearings are made in the forests there. Its incubation-period varies from 19 to 22 days in the central zone to 23 and even 25 in the north. In winter, particularly during severe cold, Black Grouse will spend the night and sometimes even several days

* Discussions of the contents of volumes 1, 2 and 3 appeared in previous issues on pages 221-224, 268-276, 313-319 and 343-348.

beneath the snow into which they will dive, either from flight or from a tree, in order to break through the hard surface layer. When a partial thaw is followed by severe frosts the birds may be unable to emerge and thus sometimes many perish. The Capercaillie (*Tetrao urogallus*) has declined greatly or become extinct in the south of the European part of the Soviet Union during the past 200 years. Only three races are recognized in the Soviet Union: the typical form in the taiga region; *T. u. uralensis* in the forest steppe, the southern Urals and the southern forest regions of western and central Siberia; *T. u. major* in the south-west of European Russia.

The Phasianidae start with the Quail (*Coturnix coturnix*) which is dealt with by N. N. Kartashev. With the clearance of forests it has gradually been extending its breeding-range, to the north-west and the north. On the other hand, during the past few decades a decrease has been recorded in certain areas, e.g. in the west of the Soviet Union, which "is apparently explained by the mass extermination of the birds while on migration (particularly in Italy, etc.)". However, we are told that the total number of Quails obtained in an autumn on the Black Sea coast of the Caucasus amounts to "several tens of thousands" and that on the Crimean coast, despite legal prohibition, hunting with a lantern by night is still widely practised and yields from 40 to 200 birds per person. Ulyanin (1941) gives 15 days as the incubation period of this species. The Pheasant (*Phasianus colchicus*) is the work of N. A. Gladkov. Formozov (1946) is quoted as an authority for the statement that the natural habitat of this species is in general the zone of plains with a low snow-fall and the foot-hills and dry continental plateaus with a low winter snow-fall and a depth of snow of not more than 10-20 centimetres.

The Anseriformes begin with the swans and geese which are by E. S. Ptushenko. The Whooper Swan (*Cygnus cygnus*) mainly inhabits the forest zone, penetrating in places further north into the tundra and in others further south into dry, open country. Its numbers have of late been considerably reduced and it has quite disappeared from some localities, particularly in the south, where its habitats have been destroyed. Only in Siberia is it now found in any numbers. Many used to be killed during the moult and in winter for their feathers and skins, but this industry is now of little significance owing to the decline in numbers. Bewick's Swan (*C. bewickii*) is a bird of the tundra and thus of the area to the north of the Whooper's, though in places it penetrates into the forest zone. Owing to persecution it has become rare in places, but on the whole it is still common. On Novaya Zemlya the first eggs have been found on 29th May and 4th June. According to Tugarinov (1941), incubation lasts 29-30 days and the young fly at 40-45 days. The Mute Swan (*C. olor*) is extremely rare except in the basin of the Ural and on certain lakes in Kazakhstan;

pairs usually nest at great distances from one another and far from human habitations. The author considers that for a number of years this species should be given full protection.

It is improbable that the Snow Goose (*Anser hyperboreus*) now breeds anywhere in continental Siberia though the typical race formerly did so in large numbers. It still breeds numerous on Wrangel Island where it was long not subjected to human persecution. But large numbers of eggs and moulting birds are now taken there and, unless checked, this "primitive utilization" (as the author terms it) will lead to the extinction of the species there also, since once its big colonies are broken up the remnants fall victims to raiding quadrupeds and birds of prey. The race *rubrirostris* of the Grey Lag Goose (*A. anser*) is apparently not recognized; at least it is not mentioned. The distribution of this species in the western part of its range is now extremely patchy and it is only at all numerous in central Siberia and the Transural Steppes. Breeding starts early in central Asia where, in Uzbekistan, the first eggs can be found about 20th March. In Kuldja the first eggs are found 14th-17th March. It is still much persecuted in the areas where it is numerous.

The White-fronted Goose (*A. albifrons*) is still very numerous and huge numbers winter in the steppes of south-east Transcaucasia. In this area many perish from "oiling". "As in a number of places the hunting of moulting birds is quite reasonably prohibited, they are now obtained in summer and autumn only by means of fire-arms." The Lesser White-fronted Goose (*A. erythropus*) breeds not only in the tundra like the White-fronted Goose but also in the forest tundra and as far south as the northern parts of the forest zone. On the whole it is somewhat rarer than the latter species and is most numerous in the basin of the Khatanga. The Bean Goose (*A. f. fabalis*) has declined considerably in numbers during the last few decades, "but in the remote and sparsely populated regions of the extreme north it is still even in our days a very common bird." It is an important item of food for humans and their dogs in the tundra and the "barbaric" methods used (slaughter during the moult) are "slowly but surely leading to its complete extermination". Its incubation-period is given as 25 days. A few winter on the Black Sea and in central Asia, but none do so in Transcaucasia or on the Caspian.

The Red-breasted Goose (*Branta ruficollis*) has been recorded in many parts of the European part of the Soviet Union and also in the neighbourhood of Irkutsk, in the Balagan Steppe and in Chukotka. Its occurrences in both spring and autumn in the area of the Sea of Azov are almost regular and it is regarded as possible that this represents the remains of a former migration to the Mediterranean which is now gradually dying out. It is rare on the Yalmal Peninsula and most numerous in the area of the

water-shed between the Yenesei and the Khatanga. Though feeding mainly on grasses it also eats *Potamogeton fluitans*, the seeds of *Galium* sp. and *Bolbochaenus maritimus*. Sometimes it eats large quantities of *Salicornia herbacea*. Like other geese it is slaughtered by the local population, particularly during the moult, for food and also for its feathers and down.

The Dark-breasted form of the Brent Goose (*Branta b. bernicla*) was not found breeding on Novaya Zemlya by Kuzyakin in 1951 and this leads the author to doubt past records of its nesting there. This bird is only at all abundant on certain parts of the Taimyr coast. It is stated that it has declined since the beginning of the century, but no details are given except the statement that the usual destructive methods are in use. There are many records, mostly of single birds, for the interior of both the European part of the Soviet Union and for western Siberia. Tugarinov (1941) gives its incubation-period as 24-26 days. On its first arrival in spring when everything is still frozen and there is as yet no growth of grass, it feeds on mosses and lichens which it pecks from rocks. When spring arrives it eats the young shoots of the grass and later the coarser growth. The form breeding on Franz Josef Land is the Pale-breasted (*B. b. hrota*). Another form, *orientalis*, described by Tugarinov in 1941, nests from the Lena estuary to the upper Anadyr (including the New Siberian Islands) and on Wrangel Island which it perhaps shares with *B. b. nigricans*, known in America as the Pacific Black Brant. It is stated that the Barnacle Goose (*B. leucopsis*) nests on the Lofoten Islands, but no authority is given. This species breeds in the Soviet Union only on the south island of Novaya Zemlya where in places its numbers have catastrophically declined in recent years. The author urges protection. Its food includes Crustacea and water-insects. The valves of marine Mollusca are found in the stomachs of birds of this species, but these may have been swallowed together with coarse sand.

The ducks are by Y. A. Isakov. Up to 50 eggs of the Shelduck (*Tadorna tadorna*), the produce of several females, have been found in one nesting-hole. The habit of several broods of young uniting behind a single pair of adults is considered to be a result of territorial conflict. A pair with young trespass on the territory of another pair and is driven out, leaving its young behind and these join up with those of the pair in possession. The Ruddy Shelduck (*Casarca ferruginea*) is quite common in parts of central Asia, in Armenia and in the north Caucasian steppes, but its numbers have greatly declined in the west of its area comparatively recently. Only a few are now left in the Crimea and none on the Sea of Azov where it was common 100 years ago. It seems likely that this is due to agricultural development. On the border between the Achinsk and Minusinsk regions it nests in deep holes in trees (usually larches), 4 to 10 metres up, sometimes several kilometres

from a lake. At least in the south, breeding appears to begin considerably earlier than the date ("latter part of May") given in *The Handbook*. In Turkmenia recently hatched chicks were found on 8th May. On the island of Barsa-Kelmes a nest with fresh eggs was found on 7th April and near Krasnoyarsk laying begins in the second half of April or in early May. We are also given the astonishing information that on the Ak-Su, according to Sludski, young the size of a pigeon were found on 7th February! But perhaps there is a misprint here.

The Pintail (*Anas acuta*) is the most abundant of the surface-feeding ducks in the forest tundra and the southern tundra. While in the north its food is mainly animal, it is predominantly vegetable in the south. The Teal (*A. crecca*) is very numerous throughout the forest and the forest steppe but less so in the forest tundra, while in the tundra it is rare. It is rarer still in the open steppes. Its food is mainly animal in summer and vegetable in winter. The Gadwall (*A. strepera*) is not certainly known to nest further north in the European part of the Soviet Union than the Rybinsk Reservoir. It frequently nests in the dry steppe at some distance (up to 2 kilometres recorded) from water. The Garganey (*A. querquedula*) is abundant in the steppe, the forest steppe and the zone of mixed forests, but it is rare in the taiga and in mountainous regions. It is not found in the tundra. In places it is common in river valleys in deserts. Its food is predominantly animal in character, Mollusca being particularly important. The Red-crested Pochard (*Netta rufina*) is an inhabitant of the zone of steppes and deserts. In the western part of its range its distribution is sporadic. It is doubtful if it breeds in Moldavia and the southern Ukraine, but it certainly does so in the Kuban. It is one of the commonest ducks in some of the low-lying districts of central Asia. Its numbers increase rapidly with the building of reservoirs and irrigation-works. Most winter on the Caspian and in the south of central Asia as well as in Iraq and India, but there is also a movement to the south-west, birds wintering on the Sea of Azov.

The Pochard (*Aythya ferina*) is of considerable economic importance in western Siberia where it supplies 23.3% of the total number of ducks obtained. In one area 41% of the nests examined by the author contained the remains of broken eggs. As a result of such losses some females lay in the nests of others, up to 27 eggs in a nest having been recorded, while one nest contained 21 eggs of this species and 7 of the Red-crested Pochard. Two females have been seen sitting together in one nest. The Ferruginous Duck (*A. nyroca*) is one of the commonest ducks of Turkmenia, the eastern shores of the Aral Sea, the middle Syr-Daria, lower Semirechie and the lower Dnieper. Its numbers vary greatly from year to year as a result of variations in the water conditions in the desert and semi-desert regions which it inhabits, and in some

years it occurs well to the north of its normal range. Baer's Duck (*A. (n.) baeri*) is regarded as a separate species by the author. Large numbers of the Tufted Duck (*A. fuligula*) are obtained for food, between twelve and sixteen thousand annually in northern Azerbaijan. It has not been recorded as a breeder in Ussuria. The supposition of Zarudny that the Seaup (*A. marila*) breeds in the Pskov and Novgorod districts appears to be without foundation. It is estimated that up to 30% of the young of this species die during their first 15 days of life, while moving from the lakes where they have been hatched to the rivers and mainly as a result of the attacks of predators, particularly large gulls. But subsequently, mortality is negligible up to the time of the breaking up of family parties. This bird is killed in large numbers for human consumption. Its food is stated to be almost evenly divided between animal and vegetable matter. The forms *mariloides* and *neartica* are rejected, but *affinis* is considered a distinct species.

The Eider (*Somateria mollissima*) has been increasing in recent years as the result of protection. But in places the birds are still shot and their eggs taken though this is severely condemned by the author who points out the importance of the down "which is widely utilized in making costumes for aviators". Some winter off the northern shores of the Soviet Union, e.g. about 1,500 off the Seven Islands (Murman coast) of which not more than 11.5% are adult males. The King Eider (*S. spectabilis*) has a much more extensive range than is stated in *The Handbook* as it breeds from Kanin eastwards along the whole coast of north Russia and Siberia to Holy Cross Bay. Throughout this area it is one of the commonest ducks and huge numbers are recorded on migration. On Kolguev from twelve to fourteen thousand are obtained annually while in moult. Steller's Eider (*Polysticta stelleri*) may have bred as far west as Novaya Zemlya, but the evidence given does not seem quite conclusive. Its area has not yet been fully worked out. It seems to be declining in numbers though subject to no special persecution.

Large numbers of Common Scoters (*Melanitta nigra*) are obtained for food and on the Peehora this species accounts for 10% of the aquatic birds taken annually. It occurs every year in small numbers in the central and southern parts of European Russia and occasionally in central Asia. These are nearly all young birds and are considered to have lost their way. Gladkov (1951) gives the incubation period of this species as 30-31 days. The form *americana* is considered a distinct species. The Velvet Scoter (*M. fusca*) has a far more limited breeding-range in the Soviet Union than is given in *The Handbook*. It nests in Esthonia, on the Murman coast, in Karelia and eastwards to the Peehora. In Trans-uralia it reaches far to the south, apparently to the sources of the River Ural and in the east it seems to extend to the Khatanga.

There are two isolated colonies in Transcaucasia. The text states that nesting is not established on Kolgucv, Vaigach and Novaya Zemlya although the map shows breeding colonies for these localities. Very few winter except in Krasnoyarsk Bay in the Caspian. *M. f. deglandi* is considered to be a separate species and *M. f. stejnegeri* to be a race of this species.

The Long-tailed Duck (*Clangula hyemalis*) is generally the commonest duck of the waters of the tundra, particularly in northern Siberia. Gatherings of tens of thousands of immature and moulting birds occur. In the above area it is also the most important duck economically, particularly in early spring since once it moves on to the sea its flesh acquires "a strong and unpleasant odour of train-oil". Many eggs and young birds are taken by skuas and large gulls, but according to the observations of Kucheruk (1948) this does not affect the average size of a brood but causes the total destruction of some (the weaker) broods. The Goldeneye (*Bucephala clangula*) has declined in the southern part of its range owing to the growth of the human population and the felling of timber, and this process is continuing. However, it is still the commonest duck in the taiga zone of European Russia and western Siberia. Two females sometimes lay in the same hole and the author once found a nest with 30 eggs, 18 of which failed to hatch. It sometimes nests in the same hole as a Smew or, more rarely, a Mallard or a Goosander. The eggs are relatively safe from predators, but in some years "an enormous percentage" fails to hatch as a result of becoming wet. In the rainy year 1951 about 50% of the nests at the Rybinsk Reservoir were abandoned for this reason. This species is not much made use of for food, although three or four thousand are annually caught with nets on the coast of northern Azerbaijan.

The Smew (*Mergus albellus*) was recently found breeding on the lower Dnieper (Danilovich, 1939) far from its normal area. It has declined in the south for the same reasons as the Goldeneye. Unlike the other saw-bills this species feeds more on water insects than on fish. The Red-breasted Merganser (*M. serrator*) is particularly common as a breeder in mountainous districts and sometimes occurs in these well to the south of its normal range, e.g. there is a completely isolated colony on Lake Sevan in Armenia. The Goosander (*M. merganser*) also breeds on this lake. A snake, still alive, was once seen to crawl from the mouth of a shot bird of this latter species.

At the end of this volume there is an addition (by N. A. Gladkov) to the previous one. The Western Sandpiper (*Calidris mauri*) (*Ereunetes maurii* according to the Russians), has been proved by Portenko to nest on the Chukotsk Peninsula.

NOTES

Little Egret in Outer Hebrides.—On 20th May 1955 at Loch Hallan, South Uist, we observed a Little Egret (*Egretta garzetta*) in full adult plumage. The bird was first seen flying up the loch being mobbed by Black-headed Gulls (*Larus ridibundus*) and it alighted near the north end which is marshy and no more than two feet deep. The spotlessly white plumage, long head and breast plumes and black legs could be clearly seen in the bright sunlight. The bill was a dark bluish-grey colour and not black as seems to be the case generally. In flight the wings were very rounded and the yellow feet were plainly visible projecting well beyond the tail. When last seen the bird was stalking through some short reeds, head inclined forward, and making occasional quick stabs with its bill at some prey invisible to us.

This is the first recorded occurrence of this species in Inverness-shire.

KEITH S. MACGREGOR, FRANK D. HAMILTON and J. D. R. VERNON

Little Egret in Scilly Isles.—On 13th May 1955 on St. Agnes, Isles of Scilly, I watched, flying in from the south, a white, heron-like bird which was soon identified as a Little Egret (*Egretta garzetta*). It landed on the edge of a freshwater pool and promptly went to sleep for a few minutes. On stalking it I had clear views of the crest, and of the yellow feet when it flew. It fed round the pool for a little while, but when, disturbed by our approach, it flew over the beach, it was so violently mobbed by gulls that it flew off in the direction of St. Mary's and I did not see it again. Some days later I had a letter from a resident on St. Mary's, describing a bird which was obviously a Little Egret, and which had been seen in the marshes there.

I have since been informed by Mr. and Mrs. F. H. Butcher that they identified a Little Egret on 1st June as it was fishing in North Hellick Bay, St. Mary's, and that it was again seen at the same spot on 2nd June.

H. M. QUICK

[Details of the Little Egrets recorded in Britain during April 1955 appeared in *British Birds* in July (pp. 319-321). The above two bring the total records for the whole spring to at least 10—EDS.]

Lesser White-fronted Goose in Norfolk.—An immature Lesser White-fronted Goose (*Anser erythropus*) was shot on Bure marshes, near St. Benet's Abbey, Norfolk, on 17th January 1955. The bird was examined on the next day by E. A. Ellis at the Norwich Castle Museum, where the skin now is. M. J. SEAGO

[A full description of the bird has been sent. Five other Lesser White-fronts were recorded in Britain in early 1955 (*antea*, pp. 323-326) and these, with the above, bring the post-war total to 32.—EDS.]

Buzzards following the plough.—The disease myxomatosis destroyed almost the entire rabbit population of Pembrokeshire during the summer and autumn of 1954 and as rabbits formed the staple diet of the Buzzard (*Buteo buteo*) the following observations may indicate that the Buzzards have been forced to concentrate more on what had previously been their supplementary food.

On four occasions during the spring of 1955 I noticed Buzzards feeding in ploughed fields during actual ploughing operations and they appeared to be picking food from the newly turned soil. There were the usual gulls and crows following very close to the plough, but the Buzzards were keeping at a "safer" distance, usually about 30 yards behind. I spoke to several farmers who had also witnessed this behaviour and one told me that he had had three Buzzards following his plough at the same time in the wake of the gulls and crows. *The Handbook* includes earthworms, insects, beetles and larvae in the list of food of the Buzzard, but, except for one probable earthworm, I was not able to ascertain what food was taken on the above occasions.

K. SMITH

WHEN ploughing operations were started in the spring of 1955, Buzzards (*Buteo buteo*) were in many places in Pembrokeshire seen watching, chiefly from the tops of hedgerow thorns. On 12th March 1955, at Tregroes, near Fishguard, I saw a Buzzard with Herring Gulls (*Larus argentatus*), Rooks (*Corvus frugilegus*) and Jackdaws (*C. monedula*) following a tractor-drawn plough. It kept behind the other birds and landed fairly frequently. Since then I have seen Buzzards following both horse- and tractor-drawn ploughs. In most cases they have kept well behind, but one in the Gwaun Valley on 30th May was most confiding, keeping close to the ploughman. It was accompanied by a few rooks, and was certainly picking up and eating what I presumed to be grubs and worms. The Rooks appeared quite undisturbed by its presence.

It is significant that no Buzzard in my part of north-west Pembrokeshire is known to have laid eggs this season.

PETER J. PANTING

WHEN I was farming 600 acres in North Pembrokeshire between 1940 and 1948, Buzzards (*Buteo buteo*) regularly followed the plough and were observed to pick up small animals (field mice, voles, moles, worms, large insects, beetles, etc.). This habit is not a new one therefore, nor necessarily associated with the absence or scarcity of rabbits. During the period already mentioned rabbits were in fact very numerous in north Pembrokeshire, in the hedges of the fields being ploughed. Again, I have this year (1955) watched Buzzards following after the plough in Pembrokeshire which is at present virtually free of rabbits.

A Buzzard when following the plough usually perches on a tree, wall or other elevated position, from which it makes sorties along the freshly ploughed furrows, but not approaching within about

50 yards of the tractor-drawn plough. It sometimes appears to see food from its watching point, when it flies direct towards the prey. Small mammals are seized in the talons and carried off; but earthworms, and beetles, etc., are picked up in the bill after the Buzzard has alighted, and eaten on the spot. Afterwards the Buzzard may hop clumsily over the furrows and take other items of food which it has seen from the ground.

A Buzzard does not hover constantly over the furrows, as do the gulls, Rooks (*Corvus frugilegus*) and Jackdaws (*C. monedula*) which follow within a few feet of the mould-boards of the plough. Gulls in fact are so bold that they are not infrequently trapped by the furrow turning over, or occasionally they have been crushed under the wheels of the tractor. I have had to extricate gulls caught by the furrows in this way several times, especially when ploughing with two- and three-furrow tractor ploughs at a good speed.

The Buzzard therefore does not have first pick of the food turned up by the plough. It has to be content with what emerges later at the surface of the new furrow some distance from the cloud of screaming gulls and Corvidae. But where it is engaged in obtaining food in this way from the newly turned earth, it seems to dominate other birds which are feeding close by; they move away as the Buzzard approaches, and fly on to join the flock close behind the plough.

R. M. LOCKLEY

FROM the time he began to plough by tractor at St. Ishmaels, Pembrokeshire, in 1939, my brother, C. M. Warren Davis, found that Buzzards were nearly always present in the field, not following the plough closely as gulls do, but settling on the ground at the ends of the field, where they definitely took worms. They were seen regularly in a small field bordered by a wood, and very frequently in other fields near, all this land being not far from cliffs. They sometimes came to a field away from the cliffs with no trees near, but less constantly. These observations apply up to 1954.

In the same district between 19th and 26th January 1953, a Buzzard spent much time daily foraging on freshly ploughed land near my house. Sometimes it would stand on a furrow and walk a few paces to pick up food; it was seen to go down between two furrows. More often it perched on a post carrying overhead wires, and flew to the ground from time to time. On 15th April 1954 there was a Buzzard at the same spot, and it continued to forage there for about a week. The field had recently been sown with corn and rolled.

When these instances of Buzzards foraging on newly cultivated ground occurred, rabbits were always abundant. T. A. W. DAVIS

[We have in the past published notes on Kestrels (*Falco tinnunculus*) following the plough (vol. xxxvi, p. 245; vol. xli, p. 279), but we were not aware that Buzzards ever indulged in this behaviour. It is evident, however, from the remarks made by Mr.

Lockley that Buzzards have long done this to a certain extent, though it seems probable that the habit has now become more frequent and widespread. This is borne out by the observations of Messrs. Smith and Panting, and also by Mr. Davis who emphasizes that in the St. Ishmaels area they used at one time merely to forage on the newly ploughed land without actually following the traetor.

Reports received so far by Dr. N. W. Moore and ourselves show that probably the majority of Buzzards in Devon, Cornwall, and south and central Wales have not laid eggs this year. Dr. Moore, who is organizing the Buzzard Survey on behalf of the British Trust for Ornithology, would be grateful if any information on breeding-suecess could be sent to him at The Nature Conservancy, Furzebrook Research Station, Wareham, Dorset. —Eds.]

Nesting Moorhen taking part in nest repair.—The following observation was made in Kensington Gardens, London, on 20th June 1955. A Moorhen's (*Gallinula chloropus*) nest, originally located among willow stems at the head of the Long Water, was seen to have become detaehed (probably due to a rise in water-level) and to have drifted out into the open. At the time of observation it appeared to have come to a stop, partly supported by a sunken piece of plank in shallow water, about ten feet from the nearest bank and about twenty-five yards from the original nesting area and from my observation point. The nest was well built-up and the top appeared to be about four inches above water-level.

In the nest were two nestlings about half-grown. One old bird was in the vicinity, and it was seen to bring to the nest a fair-sized stick and present it to one of the young ones. The latter seized the stick, and as the old bird swam away in search of more material the young one worked the stick into the rim of the nest. The old bird in the next fifteen minutes brought several good-sized sticks and lengths of waterside plant leaves, all of which the same young one took in turn and worked into the fabric of the nest. With one awkward picee of material the young bird had to get up and move around to dispose of it satisfactorily. The second nestling, although of the same size, took no part whatever in the proceedings. Eventually the old bird moved off out of sight among waterside cover, and after a short wait both young birds simultaneously got off the nest and swam to cover in the vicinity of the original nest-site. When the old bird next returned to the nest with more material and found the young gone, it carried on with nest addition itself. Next day the nest was completely deserted and the brood of young were in cover near the original site.

R. W. HAYMAN

Behaviour of Lapwing after eggs had been crushed.—On 11th May 1955 a traetor which was liming a field near Boscombe Down

in Wiltshire flushed a Lapwing (*Vanellus vanellus*) which was sitting on its nest. From the position of the wheels, it was fairly obvious that the eggs must have been crushed and this was proved by the subsequent behaviour of the bird. To my surprise the Lapwing showed no signs of distress after the accident, but approached the nest at the fairly rapid run so characteristic of the species when returning to hard-set eggs. On arrival at the nest-site it immediately picked up a piece of broken egg-shell and flew some distance with it before dropping it; almost at once the bird returned to the nest and again picked up a piece of the shell which it dropped well away from the site as before. Next, a partly formed chick was carried away, and this continued until all the debris had been disposed of.

GEOFFREY L. BOYLE

Kentish Plover in Cardiganshire.—When examining a small flock of Ringed Plovers (*Charadrius hiaticula*) with a few Dunlin (*Calidris alpina*) on the Ynyslas side of the Dovey estuary, Cardiganshire, on the afternoon of 5th May 1955, I saw a Kentish Plover (*Ch. alexandrinus*) standing at the back of the party. The light was excellent and the birds some forty yards away on clean, mudless sand. The Kentish was noticeably smaller than the Ringed Plovers and the upper plumage was sandy brown with a dark line through the eye. A white, triangular patch on the forehead extended from eye to eye and came down to a point at the base of the bill. The brown pectoral band was short and widely broken. The breast and under-parts were white, the legs and bill black.

After a while the birds flew off, the Kentish going by itself and alighting again alone. When it had settled, I realised that I had not looked for any pattern on the wings in flight, so I watched it until it flew again. No wing-bar could be seen, but this may have been due to the long range at which the bird now was.

R. H. BAILLIE

[Normally the wing-bar on the Kentish Plover, though not as striking as that of the Ringed Plover, is quite distinct. However, in Holland and elsewhere during 1955 I took opportunities of examining Kentish Plovers in the field with a view to seeing how conspicuous this feature is at various distances and found that at certain angles and particularly at longer ranges there are occasions when the wing-bar is virtually invisible.—I.J.F.-L.]

Song-flight of Wood Sandpiper on passage.—On 17th May 1955 I found an adult Wood Sandpiper (*Tringa glareola*) feeding at the edge of flood-water on Farlington Marshes, Hampshire. When flushed it uttered the normal "chiff-chiff-chiff" call-note; then, rising sharply into the stiff south-west wind, it proceeded to give the song-flight before making off over the marsh. The flight, rather like that of the Redshank (*T. totanus*), consisting of quick, tremulous wing-beats as the bird rose, and set, quivering wings

on the downward glide. This was accompanied by a short burst of song, rendered "tweedley-tweedley-tweedley . . .", which very much reminded me of a song-bird. *The Handbook* likens this to the song of the Woodlark (*Lullula arborea*). G. H. REES

[It is perhaps of interest to add that on 5th May 1955 at Azraq, in Jordan, I heard a burst of song from a Wood Sandpiper on passage.—P.A.D.H.]

Behaviour of Common Sandpiper nesting on the shore.—An earlier note of mine (*antea*, vol. xlv, p. 32) described the finding of a pair of Common Sandpipers (*Tringa hypoleucos*) breeding on a rock on a beach near Ballantrae, Ayrshire, in 1942. Since then I have found two other nests on beaches in the Ballantrae district. One of these was a well-lined, neat, grass cup with 4 eggs, among sandy bents just above high-water mark near Lendalfoot. The other, in 1953, involved observations that might be of interest in connection with the note on the behaviour of a Common Sandpiper in Kent (*antea*, p. 233).

In 1953 I first saw a single bird on 30th May, near inshore water by a shingle beach, behaving very quietly. Returning on 5th June, I saw one bird at the top of the shingle beach, and took up a position from which to watch it. My own experience of Common Sandpipers is that when they have eggs they are most furtive and elusive and perfectly quiet, but when young are present they make a very loud, shrill, and persistent clamour. This bird behaved differently, very like that watched in Kent by Mr. P. R. Griffiths, but it did utter a hardly audible squeak with its bill just open as it moved about near me, constantly settling down on the shingle as if on eggs, and after sitting quietly for some minutes, moving a few yards and again settling down, always, however, in the same area. It did not seem unduly alarmed, and never made a sound except for a gentle squeak, a sound unlike any I had ever heard from a Common Sandpiper. I did not know what to make of it but thought this "false-sitting" most suspicious, so after about 20 minutes, watching I found a hiding place behind a log on the other side of the bird's "area". Almost immediately it ran and settled down under some drift-wood oak branches and twigs at the top of the beach. I could see no eggs, but found that there were instead 4 young sandpipers, just hatched in the nest, lying flat out on dead oak leaves. M. D. CROSBY

Common Sandpipers breeding on the shore.—Since there is no mention in *The Handbook* of the Common Sandpiper (*Tringa hypoleucos*) breeding on the shore, the following note may be of value.

Visiting the Isle of Mull, Argyllshire, in the last week of May 1955, I found that the great majority of Common Sandpipers on the northern part of that Island were breeding on, or immediately

adjacent to, the seashore. Of some dozen pairs noted, only one was breeding inland, the remainder nesting in patches of grass, bracken, etc., behind the flat, pebbly shore on the east side, and also on small areas of turf beneath the tall cliffs on the north coast. A number of nests were discovered in this type of situation, their approximate position being indicated by the presence of the non-sitting bird feeding at the edge of the tide near-by.

It was obvious to me that on the north of Mull a position beside salt water, frequently the open sea, was the normal nesting-site for the Common Sandpiper. A. P. SHORTER

[Nests on the shore are apparently not uncommon in some areas (see *The Birds of Scotland*, by E. V. Baxter and L. J. Rintoul).—EDS.]

Baird's Sandpiper in Cheshire.—On 27th May 1955 I saw two waders feeding on the mud by a flash at Billinge Green, near Northwich, Cheshire. One was a Dunlin (*Calidris alpina*), and the other a smaller bird quite new to me. I succeeded in getting within a few yards and examining both birds in detail with a telescope.

On 29th May Mr. T. Dixon and I saw the bird in the same place, and also on the muddy bank of a wide canal some 300 yards distant, to which it flew when disturbed, only to return to its original mud-patch. It was distinctly smaller and shorter in the leg than the Dunlin. Its grey-brown back and wings were what I wrote down as "mottled", but the word "scaly" (used in Peterson's American *Field Guide*) describes its appearance even better. Its breast was marked with buff-grey vertical striations which came to an abrupt stop, reminding me (as I wrote down at the time) of the breast-markings of a Pectoral Sandpiper (*Calidris melanotos*). There were similar striations along the top of the crown. Its belly, under tail-coverts and under-side of its tail were pure white. In flight it appeared to have a very slight wing-bar and T.D. noticed a white patch on either side of its upper tail-coverts; rump, upper tail-coverts and tail dark. Virtually no eyestripe when seen from the side. Bill, black, slightly decurved when seen from some angles and about as long as the width of its head. Legs very dark brownish-black or black. Iris black; I thought I detected a very fine white circle round the eye, but only for a brief moment. Flight erratic and very swift. T.D. heard its call, which he wrote down as "chickiwick".

On 5th June Mr. G. Trelfa found a small wader by a flash in Marston village, just over 3 miles from Billinge Green. It proved to be the same or a similar bird. Together we watched it for a long time from a few yards. I was able on this occasion to see it closely as it faced me, a view of its head I had not had on the earlier days. We saw two pale streaks from near the eyes which almost met at the base of the bill, forming a sort of V, but could

discern no eye-stripe above or behind the eye. We had excellent views of all the other points mentioned above.

We were satisfied that it was a Baird's Sandpiper (*C. bairdii*), a bird new to Cheshire. There is some evidence that it was seen but not identified by another observer a few days earlier.

A. W. BOYD

Herring Gulls breeding on inland cliffs in Gloucestershire.—A colony of Herring Gulls (*Larus argentatus*) has become established, within the last decade, on the cliffs on the Gloucestershire side of the River Wye at Chepstow, and in view of the fact that it is the only known breeding colony in the county, and as the species is seldom found nesting on inland cliffs in Britain, some further details may be of interest.

The colony was first noted in 1947, when one pair bred, and by 1952 had increased to 5 pairs, whilst in 1953 it seems that ten nests were counted by a local fisherman (Miss E. A. Shirley *per* Col. H. Morrey Salmon); the accuracy of the last figure is partially confirmed by a personal observation of 20 adult birds in flight over the cliff on 8th July 1953, and the possibility of a further increase is indicated by a record of 25 adults present on 26th June 1954.

The only other records of Herring Gulls breeding in Gloucestershire are of isolated pairs at Aust and Avonmouth, neither of which was successful (cf. *Proc. Bristol Naturalists' Soc.*, 1942, p. 374, and 1952, p. 325).

P. J. CHADWICK

[Comparable records of inland nesting, in disused clay-pits in Cornwall, were published in *British Birds*, vol. xli, p. 277, and vol. xliii, p. 94.—EDS.]

Mediterranean Black-headed Gull in Suffolk.—A Mediterranean Black-headed Gull (*Larus melanocephalus*) was identified on Havergate Island, Orford, Suffolk, on the 8th July 1954, by Mr. R. J. Partridge, the Warden of the Royal Society for the Protection of Birds. His attention was first caught by the black head differing from the brownish heads of the Black-headed Gulls (*L. ridibundus*) which were standing close by; the black also extended further down the nape and the bird itself appeared rather larger. Its bill and legs were reddish. No black was visible on the wing, even when raised.

The bird was also seen by Mr. J. W. and Miss A. Greenacre, and by Miss M. E. Osborne. Their notes confirm the extent and quality of the black, and the greater size in comparison with the Black-headed Gulls. It was seen again on the Island on 11th July by Mr. D. B. Peakall, who noted, in addition to the points mentioned above, that the bill was heavier, of a brighter red and in general more noticeable than those of the other gulls. When the

bird was in flight he was particularly struck by the fact that there was no black at the tips of the wings. P. J. CONDER

[In 1955 a Mediterranean Black-headed Gull has again been seen at Havergate, and details will be published as soon as possible.—EDS.]

White-winged Black Tern in Norfolk.—A White-winged Black Tern (*Chlidonias leucopterus*) spent ten days on Cley Marshes, Norfolk, from 26th May to 4th June 1955 and the many observers who saw it had excellent opportunities for comparing it at close range with the eight or ten Black Terns (*Ch. niger*) which accompanied it. Photographs were taken by R. P. Bagnall-Oakeley, Howard Nicholls and Philip Wayre, and a selection of these appears on plates 54-56. The pale, silvery grey wings (whitest on the leading edge between body and carpal joint), the black under wing-coverts and the white rump were the salient features, while the intense black of the head and body contrasted strikingly with the white vent and other pale parts of the plumage. The secondaries and outer three or four primaries were dark grey while the almost square-ended tail was pearly. The blackish-red bill was distinctly shorter than the Black Tern's and the coral red legs appeared longer on the few occasions when the bird alighted on a sandy spit. W. H. Dady wrote down the following description of the bird's call-notes: "A sharp 'kweek' uttered up to five times in succession; also a harder 'kwck-kwek'." The Black Terns were making the usual petulant "krew".

R. A. RICHARDSON

[I watched this bird on several occasions during 27th-30th May and I have never seen a White-winged Black Tern less distinctive in its black and white contrasts. It was presumably immature as there was brown on the innermost secondaries.—P.A.D.H.]

Passerines alighting on the sea.—During November 1954 daily migration watches were made from the deck of the South Goodwin Lightship. On several occasions Starlings (*Sturnus vulgaris*) and in one instance a Skylark (*Alauda arvensis*) were noticed floating on the sea. In seven instances of Starlings and in the case of the one Skylark, the birds were seen to rise easily from the surface of the water and gain flight, by a downward jerk of the wings.

The Starlings all floated high in the water, wings spread and tail fanned with the individual feathers splayed apart. The head was held well clear of the water, the bill pointing upwards at 45°. Four birds, after leaving the sea, alighted on the ship, and were seen to be perfectly dry. The Skylark, which seemed to float less efficiently also reached the ship, but it was found to be oiled and as a result slightly waterlogged. Three Starlings flew off in the direction of the land i.e. west, immediately after leaving the sea, and appeared completely normal in their flight.

At no time were birds seen to alight purposely on the sea, and it is probably that in flying low over the surface, dodging the waves in the manner typical of migrating birds, they had accidentally hit the water. The crew of the lightship reported frequent occurrences of this nature. In view of the number of North American species which have crossed the Atlantic it is interesting to speculate whether in fact resting on the sea by Passerines is not of more common occurrence.

R. K. MURTON

Black-bellied Dipper in Kent.—At 1100 hours on 22nd February 1955 I watched a Black-bellied Dipper (*Cinclus c. cinclus*) at Hythe, Kent. It approached at tree-top level, dived steeply and pitched less than 30 yards away on the exposed edge of a tin bath lying in the canal. It remained for a minute or two and I was able to see that its belly was black without a trace of the chestnut markings common to the British and Irish races (*C. c. gularis* and *hibernicus*); its throat and breast were pure white, its eyes dark, beak dark and legs blackish-grey.

This was the only time the bird was seen at this point on the canal during the day, but it returned each evening at varying times between 1620 and 1740 hours from 22nd February to 3rd March inclusive, to roost under Twish Bridge where a mill-stream, then in spate, enters the canal. During this period it was seen by H. E. Axell, John V. Catlin, I. J. Ferguson-Lees, John H. Hollyer, G. E. Manser, Philip S. Redman, J. Relf, Miss Hilda M. Rowland, G. R. Shannon and many others. When there was nobody on the bridge it would fly in low, in normal Dipper fashion, and feed at the water's edge; when there was a crowd about the bridge it would drop like a stone from high above the tree-tops, and the noise it made by its wings as it braked and altered direction a few feet above the water could be heard quite clearly.

It is perhaps of interest to add that there had been a great land-fall of northern and Continental birds at Folkestone and Hythe on 21st February when the wind was due east at 25 miles an hour, dew point was 1,000 feet and the sky was 8/8 obscured. It was bitterly cold at this time.

W. S. NEVIN

American Robin in Co. Kerry.—On 11th and 13th January 1955 at Blennerville, near Tralee, Co. Kerry, a bird was seen by three members of a family, Miss M., Miss C., and Patriek McSweeney, that was strange to all of them. News of this bird reached me a day or two later, and I asked all three witnesses for descriptions of the bird as they saw it. Miss M. McSweeney described it as: shape, robin-like and thrush-like; stance, bold; bill, thrush-like; head, all upper-parts and tail, black with a noticeable glossy, green tinge on the back; chin and entire breast, reddish pink. Miss C. McSweeney said that it was a rather plump bird with a rosy pink breast and a particularly black head and that the tip of the tail looked square. Patriek McSweeney said it was like a thrush in

size and shape; head black; back lighter than the head; wings lighter than the head, but with black primaries; on the back was a greenish tinge, especially noticeable at certain angles; breast, pinky red, not brick red as in the Robin (*Erithacus rubecula*). The bird used to perch on apple trees for long periods; it was often seen preening; sometimes it would fly on to the wall and disappear into the next garden. I showed them pictures of Linnets (*Carduelis cannabina*), Stonechats (*Saxicola torquata*) and Bullfinches (*Pyrrhula nesa*), but they rejected them all with scorn; they knew these birds well.

I then wrote to the Rev. P. G. Kennedy, S. J., and Major R. F. Rutledge, and they suggested from the description that the bird might have been an American Robin (*Turdus migratorius*). Father Kennedy was able to arrange for Miss G. Roche, of the National Museum, Dublin, to send me two skins of each sex of the American Robin. I took these along to the McSweeneyes, and I first showed them a skin of a female. They were not very enthusiastic, saying that it was certainly something like their bird, but its colours were not striking enough and that it was not bright enough on the head and tail, nor rosy enough on the breast, and it was without the greeny tinge on the back. I then produced the skin of a male, and they all said at once that that was the bird they had seen, though when they handled the skin they noticed certain differences in shades of colour; their bird had been brighter on the head, tail and breast, and it had a much more obvious green tinge on the back. No doubt the skins had faded somewhat.

In spite of the fact that the McSweeneyes' descriptions did not include mention of the white eye-ring or of the white tips to the tail-feathers, and in spite of the fact that the chin of the American Robin is white and not reddish-pink, as suggested by the description, I am quite satisfied that their bird was a male American Robin.

FRANK KING

[It is of interest to recall (see *antea*, pp.204-207) that at about this time, on 5th January, another American bird, a Myrtle Warbler (*Dendroica coronata*), was first seen in Devon. Further, an adult male American Scoter (*Melanitta nigra americana*) was observed by the Brielse Maas, near De Beer, Holland, on 26th December 1954, later being found dead on the 28th (*Ardea*, vol. 443, pp. 132-134).—EDS.]

Whinchats choosing nest-site.—Nest-site selection is not a commonly observed phenomenon and there are comparatively few published references to this brief phase of breeding biology. The following note on the Whinchat (*Saxicola rubetra*) might therefore be of interest.

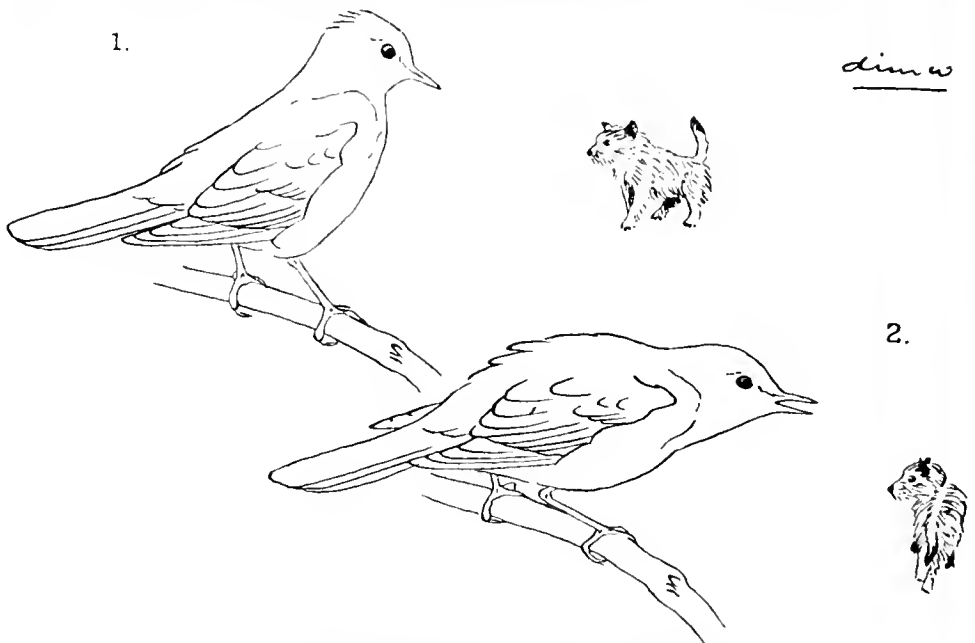
On 21st May 1955, a pair of Whinchats had completed a period of feeding. The hen, having obtained a beakful of moss, proceeded to a clump of whinberry and deposited the moss in con-

cealment. Likewise a second load of moss was added to the first, the cock bird now being in attendance at the site. A third load of moss was about to be added when the cock made an aggressive rush at the hen, driving her away, whereupon she proceeded to another clump of whinberry some 12 yards away and deposited the moss there. The hen now brought a fourth load of moss to the original site, hovered above it briefly, then flew directly to the new site, where the cock bird was now in attendance. Moss was seen to be added at the new site on seven more occasions before observations ceased. The moss was always obtained from the same source; the cock did not accompany the hen on these excursions or remain at the new nest-site after about the first three deposits of moss. The new site was examined on the 8th June and the completed nest contained six eggs.

It appears that in this instance site selection by the hen was subject to the arbitration of the cock bird. LAWRENCE ECCLES

[In their paper on "Nest-site selection by birds" (*antea*, vol. xxxvii, p. 8), C. and D. Nethersole-Thompson say of the Whinchat: "Female watched repeatedly dropping into and rising from nest-site eventually chosen, cock present but he did not actually inspect site. Building in full swing three days later (one record)." —Eds.]

Nightingale threatening Cairn Terrier.—On the edge of a wood near Littlebury, Essex, on 20th June 1955, I came across a pair



NIGHTINGALE (*Luscinia megarhynchos*) THREATENING CAIRN TERRIER
(Drawn by D. I. M. Wallace)

In Fig. 1 the bird is beginning to display in resentment of the dog's approach, with head up, crown feathers raised, and flicking wings and tail. In Fig. 2 the bird is "swearing" volubly, dipping its head up and down; the dog, completely unnerved, retires.

of Nightingales (*Luscinia megarhynchos*) attending fledged young at ground level. While I was watching them from some twenty yards, my Cairn Terrier, attracted by their movements, went forward to investigate head and tail up. One of the parent birds immediately flew up to an exposed elderberry branch and began to display, vigorously flicking wings and tail and scolding with head held high and feathers on the crown raised at the back. The dog, somewhat unnerved at this reception, replied with the strange combination of a low growl and vigorous tail-wagging. The bird, obviously regarding this as a highly treacherous approach, gave vent to further rage. A stream of harsh croaking and scolding notes was flung at the dog and the bird started to dip its head in a magnificent display of defiance. The dog stood its ground for a few seconds, then, tail well down, fled. Before this occasion it had given ground to only one other creature, an Ayrshire cow!

D. I. M. WALLACE

Whitethroat capturing Hawk-moth.—On 23rd May 1955, at Blakeney Point, Norfolk, a Whitethroat (*Sylvia communis*) was seen in the clump of cotton-wood with a large moth in its bill. The Whitethroat flew to the ground beneath the trees, dropped the moth and pecked it until fluttering ceased, then bit off the wings and flew away with the body. I retrieved the wings and identified them as those of a Poplar Hawk-moth (*Laothoe populi*).

L. LLOYD-EVANS

Field-characters of the Goldcrest.—As a result of examination of Goldcrests (*Regulus regulus*) trapped at Saltee Bird Observatory, Co. Wexford, it is clear that some birds which, in the field, appear to be females are in fact males. Moreover, in some cases, even in the hand, unless the feathers of the crown are turned back with some instrument the crest appears to be that of a female.

The Handbook leads one to believe that the sexes should be indistinguishable in the field from the colour of the crest. On this assumption I wrote in *The Birds of Ireland* (1954) that the female is a constant songster in spring. This statement is very probably incorrect.

ROBERT F. RUTTLEDGE

Richard's Pipit in Co. Wexford.—On 5th and 6th November 1954 I saw a Richard's Pipit (*Anthus richardi*) near Carnsore Point, Co. Wexford. At first I thought it might be a Tawny Pipit (*A. campestris*), for the loud note reminded me of the call of a Tawny Pipit that I had watched on Gt. Saltee, Co. Wexford, in April 1954, but whereas the Tawny Pipit's note was not unlike that of a Yellow Wagtail (*Motacilla flava*), this bird had a harsher note, more rippled, like that of a Skylark (*Alauda arvensis*). I

wrote it down as an explosive "tswek", sometimes harsh sometimes squeaky. It was uttered frequently as the bird rose, but also from the ground on some occasions as I approached. I have examined skins in the British Museum (Natural History) and conclude that, on the following grounds, the bird must have been a Richard's Pipit.

The size was a good deal larger than that of a Roek Pipit (*A. spinoletta petrosus*), with which it was seen in flight, and a Reed Bunting (*Emberiza schœniclus*), near which it was seen perched. Also the upper-parts were not pale, but resembled those of a Skylark. Furthermore, the head appeared lighter than the upper-parts in flight, as in a Yellow-hammer (*E. citrinella*). This was probably due to pale stripes above and below the eye. The under-parts were pale buff, richer on the breast, white on the throat, with fine, brown streaks on the upper breast. The outer tail-feathers appeared white in flight.

This is the third record of the species in Ireland.

P. W. P. BROWNE

Feeding habits of Starlings.—With reference to the note on this subject (*antea*, p. 188) I saw similar behaviour on 18th May 1937 at Darlington, Co. Durham. A Starling (*Sturnus vulgaris*) was collecting worms on a lawn. When first seen it already had three or four in its bill. It put these on the ground, went a few steps, pulled out another worm, came back and put it down with the others. It then went off again a short distance and pulled out another worm, returned to its pile, put down the last worm, then picked them all up together and flew off.

W. E. ALMOND

Pied Wagtail swimming.—On 8th June 1955 I saw a fully fledged juvenile Pied Wagtail (*Motacilla alba*) fly half-way across the River Meon in Titchfield Haven, Hampshire and settle (apparently deliberately) on the water, where it remained motionless for about 5 seconds before it took off again quite easily and flew to the further bank. An hour or two later, Roy Dennis and Peter Noot saw what was presumably the same bird at the same place fly out to the middle of the river, hover for a few moments, then alight on the water; it splashed about, swam a few inches, then took off again and flew back to its perch.

C. SUFFERN

11 OCT 1955
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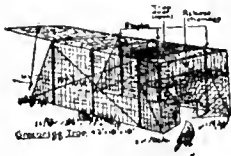
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Cover photograph by G. K. Yeates: Great Crested Grebe (*Podiceps cristatus*).

VOL. XLVIII
No. 10

OCTOBER
1955



BRITISH BIRDS

CROSSBILLS IN SWEDEN IN 1953

By GUNNAR SVARDSON

INTRODUCTION

CROSSBILLS (*Loxia curvirostra*) belong to the normal avifauna of Sweden. The birds are often seen on the wing or their call is heard. They breed in the coniferous woods all over the country, and nest preferably in February-March, when the seeds of the spruce ripen. The number of Crossbills, however, is strongly fluctuating. It is more difficult to evaluate these fluctuations and uncover the movements in Scandinavia than in what is only an invasion area, where the birds are sporadic and therefore more observed and commented upon by local ornithologists. It is harder to say if a bird was more or less common last year than to say if it was observed or not.

THE BREEDING POPULATION

Loxia curvirostra breeds every year in Scandinavia, though in highly varying numbers. The Parrot Crossbill (*L. pytyopsittacus*) is more irregular, sometimes not observed with certainty for a couple of years, in other years breeding in moderate numbers, though always less common than *curvirostra*. The Two-barred Crossbill (*L. leucoptera*) has been found breeding in Sweden only after the great irruptions from the east and always in very small numbers. In this paper only *L. curvirostra* is dealt with.

In the winter 1952-53 the crop of spruce cones was low everywhere in Sweden. The number of wintering and breeding Crossbills was also low, especially in northern and middle Sweden. No reports are available indicating a large breeding population there, but several observers (P. O. Swanberg, A. Blomgren, A. Brännström) stress that the numbers were small.

In southernmost Sweden things were somewhat different. Mr. W. Angermark reports from the province of Bohuslän (on the west coast) that Crossbills were numerous on the island of Stora Askerö in February, where there was locally a fairly good spruce-cone crop, and some were still there as late as 5th May. Mr. G. Fransson reports abundant flocks of Crossbills in the vicinity of the town Nässjö, province Smaland, during February-April. The birds visited pines, which indicates that there was no supply of the preferred spruce seed. The occurrence of flocks during the nesting-season may mean that some of the birds did not breed. Mr. Fransson found two nests, however, one on 21st April with 4 eggs and another with young which fledged about 1st May. As Mr. Fransson points out, breeding was late. Finally, Mr. P. Häggblad, living at Angelholm in Skälderviken Bay on the west coast of Skane reported hundreds of Crossbills occurring during January-March 1953, when in huge flocks they searched the pines for food. Again, this flocking was abnormal behaviour for the season and indicated a shortage of the usual food. Mr. Häggblad found no nest.

The information available gives the general impression that breeding Crossbills were scarce in spring 1953, and that their numbers were below average everywhere except at certain localities in southernmost Sweden, where they crowded in pines and were not paired. The locality Angelholm, moreover, is rather unfavourable for Crossbills and their clustering in this coastal area was more like an arrested movement than a normal breeding distribution.

THE SUMMER MOVEMENT

There were two sources of information about the movement of Crossbills in Sweden in 1953. One was a number of records sent in to the writer as replies to a request for details of known second broods and some few published reports; the other source was the continuous daily observation and counting of passing birds at the two Swedish bird-observatories. At Ottenby daily countings began on 1st July, but at Falsterbo, at the south-west point of Skane, not until 1st August. Since it was thought that the figures obtained at the bird-observatories would be much better than sporadic observations and haphazard estimates by scattered observers, no general request for figures was made.

If the 1953 season was below average for breeding Crossbills it was clearly above average as regards moving birds. The countings at Ottenby and Falsterbo (Table I) both show that the passage was at least ten times larger than during the other recent seasons for which data are available. Therefore 1953 stands out as a great passage year, equivalent to 1935, 1930 and 1927, all of which were years with huge numbers of Crossbills passing in summer and autumn.

TABLE I—NUMBER OF PASSING CROSSBILLS (*Loxia curvirostra*) OBSERVED AT THE SWEDISH BIRD-OBSERVATORIES

	1942	1943	1944	1947	1948	1949	1950	1951	1952	1953	1954
Ottenby	x	x	x	59	19	28	0	31	10	300	0
Falsterbo	320	450	698	53	x	138	2	x	124	6,000	15

The Falsterbo figures for 1942-1944 are from Rudebeck (1950), for later years from the unpublished files of the Swedish Ornithological Society. Data from Ottenby are from the Ottenby reports published in the journal *Var Fagelvärld*. The observation period at Falsterbo is 3 months and at Ottenby 4 months.

Jenning (1954) records the start of the movement at Ottenby in the last days of May, when Crossbills occurred in the deciduous wood north of the bird-observatory. No birds were observed leaving Oland, at the bird observatory, however, until the last days of July. But the movement certainly was in full swing earlier, as Mr. J. Mascher reports numerous flocks moving south or south-west during early mornings in mid-July at different localities on Oland. Also, the observations of Mr. H. Johansson at the south part of Oland show that considerable numbers passed the island in August without taking the course over the bird-observatory at the very south point.

Nordin (1954) noted two Crossbills on the remote isle of Stora Karlsö in the Baltic on 18th June, indicating passage from the east, and at the same time birds were observed at the vicinity of Stockholm (K. Curry-Lindahl, and the writer). Wachenfeldt and Hanson (1954) saw several flocks flying straight south in the early morning of 11th June in south Holland on the west coast and Mr. P. Häggblad reports from Angelholm that flocks were flying south or south-west in late May and June. In Lapland the passage was not noted until late July or August (Brännström).

The meagre information about the early movement suggests that the birds passing or leaving Sweden south-westwards in late May and June were mainly those that had wintered and possibly bred in southern Sweden, but the greater movement, passing Scandinavia in July or later was built up by immigration and passage of eastern populations.

The main months for passage were July and August and the high figures at Falsterbo in the period 18th-23rd August probably mark the very peak of the irruption (see Table II). But birds continued to pass also in September and October.

TABLE II—PASSING CROSSBILLS (*Loxia curvirostra*) AT OTTENBY AND FALSTERBO IN 1953

(Only those birds which were observed heading out over the sea are included.)

OTTENBY					FALSTERBO			
Day	July	Aug.	Sept.	Oct.	Day	Aug.	Sept.	Oct.
1st	—	—	10	—	1st	—	38	—
2nd	—	—	—	35	2nd	21	74	94
3rd	—	—	—	—	3rd	—	2	34
4th	—	—	—	29	4th	—	—	21

OTTENBY					FALSTERBO				
5th	—	—	—	—	5th	—	—	—	—
6th	—	7	—	—	6th	—	—	21	—
7th	—	—	20	—	7th	—	3	43	—
8th	—	—	—	—	8th	11	—	—	—
9th	—	—	—	7	9th	19	—	6	—
10th	—	13	—	—	10th	167	13	—	—
11th	—	—	—	—	11th	69	342	—	—
12th	—	—	—	—	12th	21	—	—	—
13th	—	—	—	—	13th	58	—	—	—
14th	—	—	—	—	14th	471	19	1	—
15th	—	—	—	—	15th	217	12	3	—
16th	—	—	—	—	16th	172	67	—	—
17th	—	—	—	—	17th	—	25	—	—
18th	—	—	—	—	18th	705	10	—	—
19th	—	—	—	—	19th	59	—	14	—
20th	—	—	—	—	20th	1.195	—	10	—
21st	—	—	—	—	21st	87	28	9	—
22nd	—	—	—	2	22nd	82	10	15	—
23rd	—	—	—	—	23rd	1.162	80	—	—
24th	5	—	—	—	24th	33	104	—	—
25th	22	—	1	—	25th	—	123	—	—
26th	—	—	37	—	26th	43	—	12	—
27th	—	—	1	—	27th	31	12	—	—
28th	—	59	—	6	28th	22	15	14	—
29th	9	7	3	—	29th	33	5	1	—
30th	—	23	—	—	30th	29	—	—	—
31st	4	—	x	—	31st	14	x	—	—

SUMMARY

Breeding Crossbills were few in Sweden in spring 1953. In some localities in the southernmost part of the country large flocks occurred, feeding in pines. Behaviour and food conditions indicate subnormal breeding activity. A few (late) nests were found.

In May and June Crossbills were noted on straight flight, heading south or south-west. Numbers were few until mid-July when they passed all through the country coming from the east, moving west, south-west or south in numbers more than ten times higher than in recent years. The movement culminated in August and was equivalent to that of the years 1935, 1930 and 1927.

ACKNOWLEDGEMENTS

The writer is indebted to a number of contributors, the names of whom are given above, and further to the Swedish Ornithological Society for the use of material collected at the two Swedish bird-observatories.

REFERENCES

- JENNING, W. (1954): "*Verksamheten vid Ottenby fågelstation 1953.*" (The activities of the ornithological station at Ottenby in 1953). *Var Fågelvärld*, 13: 53-76.
- NORDIN, I. (1954): "Exkursionsanteckningar från Gotland sommaren 1953." *Fauna och Flora*, 49: 62-68.
- RUDEBECK, G. (1950): "Studies on bird migration." *Var Fågelvärld*, supplementum 1. 148 pp.
- WACHENFELDT, T. VON and HANSON, S.-A. (1954): "En sammanställning av sex års fågelstudier i trakten av Oxhultsjön 1948-1953." *Fauna och Flora*, 49: 109-123.

THE PATTERN OF MIGRATION IN 1954 AT THE EAST COAST BIRD OBSERVATORIES

By R. K. CORNWALLIS

I—SPRING

THE spring migration on the East Coast of Britain in 1954 showed much the same pattern as in 1953: little drift movement in the southern part of the North Sea; rather more at Fair Isle and the Isle of May but no really large-scale movements developing.

21st-31st March.

The first movement was noted on 21st March. On this day there was a southward passage at Spurn of small parties of Lapwings,* Starlings, Jackdaws, Linnets, Meadow Pipits and *ca.* 30 Chaffinches. Two Black Redstarts were also seen. At Gibraltar Point on the same day 2,000+ Chaffinches moved south-west, and at Cley there was a westerly passage of Meadow Pipits and a few male Chaffinches. On March 22nd *ca.* 100 Chaffinches moved south at Spurn, and *ca.* 60 on the 23rd.

These south and south-westerly movements towards the end of March, particularly of Chaffinches, are noted in most years at Spurn and Gibraltar Point, but the reason for them is not known. There was a similar southward movement at Spurn of several species, principally Starlings and Linnets, on 28th March when three more Black Redstarts were also noted. Gibraltar Point was not manned on this day.

In the northern sector there was an arrival of 100+ Blackbirds on the Isle of May on 21st March, the day of the big southerly passage at Spurn and Gibraltar Point. At Fair Isle an early Yellow Wagtail arrived on 25th March, a Black-bellied Dipper on the 28th; and on the 29th there was a big rush of hundreds of Blackbirds and at least 50 of each of Fieldfare, Redwing and Song Thrush. There was also a big fall of Woodcock, *ca.* 40 Chaffinches, many Robins and Starlings, the first Willow Warblers and an early Wood Warbler.

April.

During the whole of April very little movement was noted, except for the arrival of summer visitors. At Fair Isle a minor movement of *ca.* 60 Blackbirds in a W.S.W. gale was noted on 14th April and a Lapland Bunting was seen on the 11th and 12th. On the Isle of May single Goldfinches (a rare bird there) occurred on the 14th and 20th and a Grasshopper Warbler on the 15th. At Monks' House Meadow Pipits were unusually scarce throughout the month. At none of the other Observatories except Cley were

* Scientific names of species mentioned in the text are all given in an appendix on pages 445-446.

any noteworthy birds seen, though the normal summer visitors were recorded in small numbers. At Cley westerly passage of Meadow Pipits and Linnets was noted on 5th April, a Ring Ouzel on the 11th, a Great Grey Shrike on the 14th and a male White-spotted Bluethroat on the 18th.

1st-5th May.

The first few days of May saw the largest movement of the spring, especially at the northern Observatories. It was caused by easterly winds to the north of a depression in the southern half of the North Sea. The drift appears to have developed first in the southern part of the North Sea on 30th April and moved steadily northward over several days. The species involved were Hirundines, Willow Warblers, Whitethroats, Redstarts, Wheatears, Continental Robins (especially at the more northerly Observatories), and smaller numbers of other warblers, Tree Pipits, Whinchats and Pied Flycatchers. It was noted at Dungeness on 30th April, at Cley 30th April-2nd May, at Spurn 1st-2nd May and 4th-5th, at Monks' House 3rd-5th, on the Isle of May 2nd-5th, on Fair Isle 3rd-5th. Gibraltar Point was not manned at this time.

6th-12th May.

During the next week there was much redetermined passage and an anticyclone developed on 8th May after two days of westerly weather. These conditions produced an easterly airflow across the whole of middle Europe and a number of birds of south-eastern origin (Little Egrets, Squacco Herons, Spoonbills, Little Gulls, etc., see *antea*, vol. xlvii, p. 284; vol. xlviii, pp. 127-130) were recorded from various parts of Britain, but no large-scale drift movement developed on the East Coast. On 9th-10th May there was a major passage of Black Terns through Britain (see *antea*, pp. 148-169). Highlights on the East Coast during this period were a Red-throated Pipit, a Grey-headed- and Blue-headed Wagtails at Fair Isle; Goldfinches at Fair Isle on the 11th and at the Isle of May on the 12th; Wrynecks at the Isle of May on the 7th and 9th; a Continental Dunnock at Cley on the 7th.

13th-31st May.

During the rest of May there was little sign of drift except on the 14th when a minor movement chiefly of Whitethroats and Willow Warblers reached the Isle of May. A Greenland Redpoll at Fair Isle on the 19th, Bluethroats there on the 23rd and 26th, an Icterine Warbler there on the 30th and an Ortolan Bunting at Cley on the 17th are the only occurrences worthy of mention.

II—AUTUMN

1st-19th August.

Consistent westerly weather characterized this period with only a brief interlude on 10th August when a depression moved up the North Sea and brought a small scale drift movement from the

Skagerrak to Fair Isle of Willow and Garden Warblers, waders, Herons and a Barred Warbler. Southerly coastal passage at the mainland Observatories grew steadily in volume from 4th August onwards. An Aquatic Warbler occurred at Cley on the 6th. At Cley and Gibraltar Point Kestrel movement was noted on the 8th and 9th respectively. At Gibraltar Point there were passages of Willow Warblers and a Wood Warbler on the 7th-8th and again on the 11th-12th, but these were not noted elsewhere. On the 14th Whitethroats and Willow Warblers moved at both Spurn and Gibraltar Point and Swallow passage increased from this date. Whitethroats and Willow Warblers moved at Dungeness on the next day, the 15th, and there was a marked movement of Willow Warblers at Gibraltar Point on the 19th. In the westerly conditions prevailing it is improbable that these were drift migrants from the Continent and they were, presumably, British-bred birds. White Wagtails at Fair Isle and Icterine and Wood Warblers at the Isle of May on the 13th, a Barred Warbler at Fair Isle on the 18th, Greenland Wheatears at Monks' House on the 15th and 18th and two Barred Warblers at Cley on the 19th were other noteworthy birds during this period.

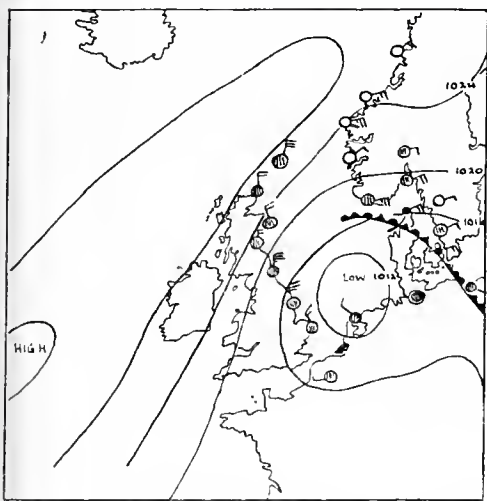


Fig. 1. Midnight, August 19th-20th, 1954.

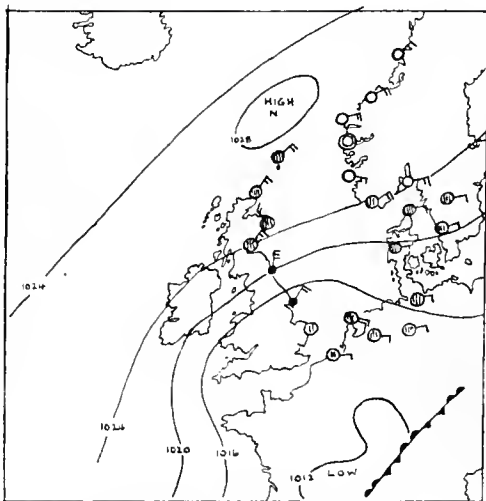


Fig. 2. Midnight, August 20th-21st, 1954.

20th-22nd August.

These three days saw the biggest drift movement of the autumn from the Continent. The synoptic weather charts for midnight on the nights of 19th/20th and 20th/21st August are shown in Figs. 1 and 2. It will be seen that on the first of these nights the southern part of the North Sea was dominated by a depression, conditions leading to drift existing only to the north of it off the west coast of Norway. By the following night this depression had retreated southwards to southern France, and the whole of the North Sea area had become subject to the easterly winds to the

north of this depression and to the south of an anticyclone which had moved up to the north of Britain, a combination of cloud and light airs on the Continental coast being particularly conducive to drift. On the 20th drift was most marked at Fair Isle but was noted on a smaller scale at all the Observatories (the Isle of May was not manned). Willow Warblers were the chief species concerned at Fair Isle but there was also a Wood Warbler and a movement of Herons. A Wryneck occurred at Spurn and a Barred Warbler at Gibraltar Point. August 21st saw the peak of this movement at all stations. Willow Warblers were again the chief species at Fair Isle with two more Wood Warblers. At Monks' House a Red-backed Shrike, a Barred Warbler and two Pied Flycatchers occurred. At Spurn *ca.* 40 Willow Warblers, *ca.* 50 Pied Flycatchers, *ca.* 25 Garden Warblers, six Wryncks, two Red-backed Shrikes, a Wood Warbler and six Redstarts were noted. At Gibraltar Point Pied Flycatchers and Redstarts were the chief species, but no Willow Warbler movement was recorded. At Spurn, Gibraltar Point and on the east coast of the Wash this movement was not observed until the late morning, between 10.00 and 11.00 a.m. Cley was unfortunately not manned on this day, but on the following day a large variety of species including many Pied Flycatchers, Garden Warblers and Willow Warblers, a smaller number of Redstarts and Wheatears and eight Wryncks, two Bluethroats, two Barred Warblers, a Red-backed Shrike and a Black Redstart were seen and it seems likely that they had arrived on the 21st. Further south, at Dungeness, the movement was much less marked, but there was a "rush" of Pied Flycatchers on the 21st. On the 22nd the movement was dying out, but a Wryneck was noted at Monks' House, an Icterine Warbler and a Barred Warbler at Spurn, and a movement of Willow Warblers, Whitethroats, Garden Warblers and Pied Flycatchers at Gibraltar Point.

23rd-26th August.

Weather on the 23rd and 24th was north-westerly and the birds recorded on these days were probably "left-overs" from the earlier movement. They included a Scarlet Grosbeak at Fair Isle on the 24th; a Barred Warbler at Monks' House on the 23rd; a Wood Warbler and a movement of Willow Warblers at Gibraltar Point on the 23rd and the only Tree Pipit passage (*ca.* 50) of the autumn there on the 24th; a Barred Warbler at Cley on the 23rd with two on the 24th and two Bluethroats and two Wryncks there on the 23rd. On the 25th a depression moved up the North Sea followed by an anticyclone on the 26th and drift was resumed on a reduced scale. At Fair Isle there was a sizeable movement of Willow Warblers and two Barred Warblers on the 25th. At Spurn there were three Barred Warblers, two Icterine Warblers and two Red-backed Shrikes on the 26th. At Gibraltar Point a Wryneck and *ca.* 15 Pied Flycatchers were noted on the 26th. At Cley two

Icterine Warblers, a Bluethroat and two Wrynecks were recorded on the 25th and a Siberian Lesser Whitethroat and a Black Redstart on the 26th. At Dungeness a Wryneck occurred on the 25th and Pied Flycatchers reached a peak on the 26th.

During both these periods of drift Temminck's Stints were recorded in unusual numbers in eastern England from Monks' House to the Wash. Ruffs, Spotted Redshanks, Little Stints and Curlew Sandpipers also occurred in considerable numbers at this time.

27-31st August.

During these five days an anticyclone was centred over England and winds on the East Coast were light westerly. A large scale southerly coastal passage of Hirundines, mainly Swallows, took place at the mainland Observatories. Peaks were on the 26th at Monks' House, on the 27th and 28th at Spurn, from the 27th to the 30th at Gibraltar Point and on the 30th and 31st at Cley (westerly passage). The orderly succession of peak days at each Observatory in north-to-south order is noteworthy. During this period a Barred Warbler at Fair Isle on the 29th, a Barred Warbler, a Red-backed Shrike and a Black Redstart at the Isle of May on the 28th, a Wryneck, a Barred Warbler and a Red-backed Shrike at Monks' House on the 27th, a movement of Whitethroats and Willow Warblers at Spurn on the 31st, a Wryneck and an influx of Wheatears at Gibraltar Point on the 31st, and a Wryneck at Cley on the 29th may have been due to redetermined passage. The Red-backed Shrike at Monks' House, a first-winter male, was ringed and subsequently recovered in Sicily on 24th September (28 days later). It had, presumably, reorientated after being involved in the drift movement and was back on its proper south-easterly course.

1st-17th September.

During the whole of this period the weather was predominantly westerly. Several large-scale coastal passage movements were noted at the mainland Observatories and several brief drifts of the cyclonic type (on the north side of depressions over the North Sea) were recorded mainly at the northern island Observatories.

The first of the coastal passage movements was localized to the Lincolnshire coast. It was noted at Gibraltar Point on 3rd, 4th and 5th September and comprised Swallows, Meadow Pipits, finches and Wheatears (these last in unusual numbers—*ca.* 250 each day). The second such passage was on a much larger scale and more widespread, being noted from Monks' House to Gibraltar Point. This time, however, and in contrast to the movement of 26th-30th August, the succession of peak days at each Observatory was reversed, being from south to north. The species involved were again Hirundines, principally Swallows, and Meadow Pipits. (On 11th September 20,000+ Swallows passed at Gibraltar Point;

on the 12th *ca.* 6,000 at Spurn; and on the 13th there was a "strong movement" at Monks' House. The movement was most prolonged at Gibraltar Point, *ca.* 15,000 passing on the 12th, 5,000 on the 13th and 14th, 1,500 on the 15th and 1,000 on the 16th. On peak days passage continued from dawn to dusk instead of, as is usual, slackening after mid-morning. Another passage of Swallows also took place at Monks' House on the 17th. The

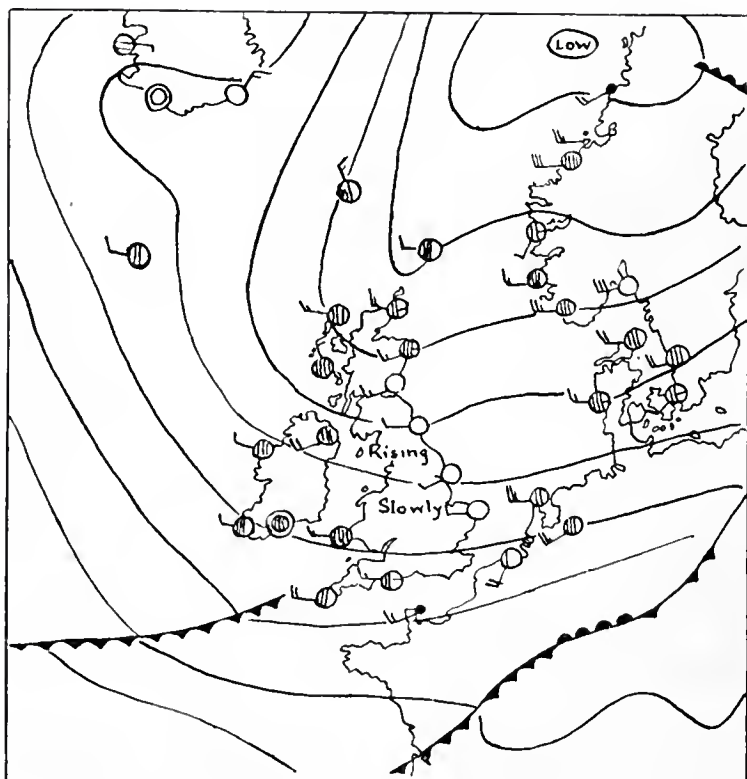


Fig. 3. 06.00, September 12th, 1954.

synoptic weather-chart for dawn on 12th September is shown in Fig. 3. It will be seen that the entire wind-system affecting north-western Europe was westerly, making it most unlikely that the birds involved were of Continental origin. Winds on the East Coast of England, however, were light and skies clear—good conditions for the southerly coastal passage of British-bred birds.

Cyclonic drift out of the Skagerrak on a small scale was recorded at Fair Isle and the Isle of May on 3rd and 4th September. Willow Warblers at both stations and three Barred Warblers at Fair Isle were noted among other birds. An Arctic Warbler occurred at Fair Isle at the same time as *ca.* 40 White Wagtails on 2nd September, the day before this drift started, and these may have been on re-directed passage from further north (see *antea*, pp. 132-133). A Bluethroat occurred at Cley on the 5th. A similar type of movement but originating further south occurred on the

6th-7th, a Bluethroat, *ca.* 30 Whinchats and *ca.* 15 Pied Flycatchers arriving on the Isle of May about 3 p.m. on the 6th, two Icterine Warblers, a Barred Warbler, two Bluethroats, two or three Lapland Buntings and four Wrynecks appearing at Fair Isle on the 7th and a Wryneck and a Barred Warbler at Monks' House on the same day. On the 10th another small influx confined to Fair Isle brought yet another Barred and several other species of warbler, but the weather conditions on this occasion suggest redetermined passage from Faeroe. A Great Grey Shrike was seen at Spurn on the 12th, and two Short-toed Larks at Cley on the 16th (see *antea*, pp. 36-38). Note also that two American species new to the British list were recorded during this period. A Stilt Sandpiper was seen at Spurn on 31st August and a Wilson's Phalarope in Fife on 11th September (see *antea*, pp. 18-20 and 15-17). A Buff-breasted Sandpiper was seen at Spurn on 6th September.

17th-19th September.

No invasion of Lapland Buntings on the scale of 1953 was recorded in 1954, but during these three days a number of birds of possibly north-western origin were recorded. The synoptic

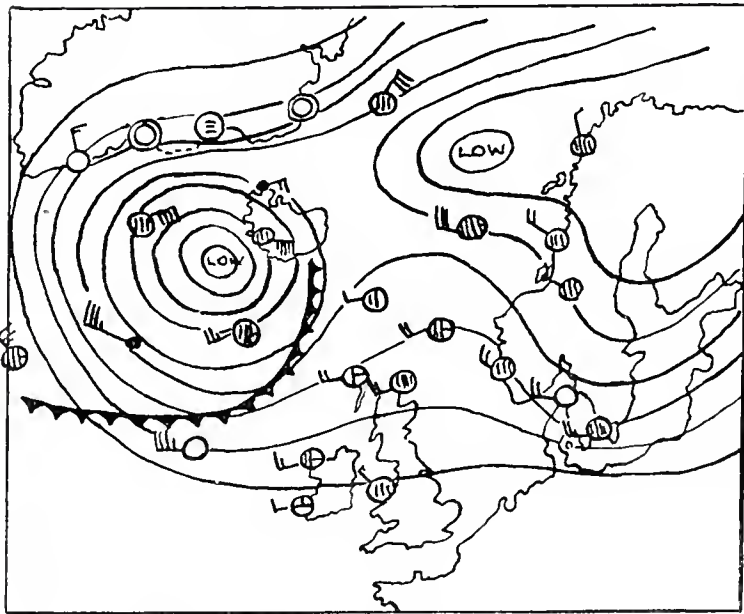


Fig. 4. Midday, September 18th, 1954.

weather map for the North Atlantic at mid-day on 18th September is shown in Fig. 4. The picture is very similar to that of the 1953 "invasion", a deep depression south-west of Iceland bringing gale-force westerlies across the North Atlantic. Note too that weather on the Greenland coast—clear skies and calm—was favourable for initiating migration. The occurrences of north-

western birds noted were a Greenland Redpoll and Snow Buntings (possibly of Greenland origin) at Fair Isle on the 17th, three Greenland Redpolls on the 18th, a Lapland Bunting there on the 19th and four on the 20th. Lapland Buntings were also seen at Cley on the 18th and 21st. The position is complicated by the fact that there was apparently a movement on the 17th from the west Norway coast by cyclonic drift round a small depression centred on the Aalesund area, two Scarlet Grosbeaks, six Willow Warblers and a pair of Pintail being seen on Fair Isle. The Lapland and Snow Buntings may, therefore, have come from north-western Europe rather than from Greenland, but the occurrence of the Greenland Redpoll is suggestive.

20th September-15th October.

For the next 26 days the weather remained consistently westerly. In view of this and of the fact that, except for the period 20th-26th August, the weather during the preceding part of the autumn had also been predominantly westerly, it is most remarkable that four occurrences of three species of Far Eastern birds, none of them previously on the British List, should have been recorded. This serves as a salutary reminder of how limited is our knowledge of the causes which bring individual wanderers to our shores. The birds in question were two Yellow-headed Wagtails which occurred at Fair Isle on 20th September and 1st October (see *antea*, pp. 26-29), a Siberian Thrush at the Isle of May also on 1st October (see *antea*, pp. 21-24) and a Baikal Teal at Fair Isle on September 30th. In the case of the last of these it is not possible, however, to rule out the chance that it may have escaped from captivity.

Conditions on 20th September were such that direct drift to Fair Isle is unlikely and the three Scarlet Grosbeaks and the first Yellow-headed Wagtail that were seen seem likely to have been on redetermined passage following the drift of 17th September. On the 21st there was a further cyclonic drift from the coast of western Norway round the north-western sector of a depression centred on the sea area Forties. This reached Fair Isle only. Blackcaps predominated and two Siberian Lesser Whitethroats, another Arctic Warbler and a Grasshopper Warbler were recorded. The first few migrant Blackbirds and *ca.* 150 Snow Buntings appeared and another Barred Warbler and a Red-backed Shrike were found next day. 1-2 Barred Warblers occurred at Cley on the 22nd.

On 23rd September six Greenland Redpolls occurred at Fair Isle. On September 28th four Lapland Buntings were seen there. These had probably arrived by trans-Atlantic drift from Greenland.

The next drift movement of the period, again cyclonic, was the one of 1st October that brought the Far Eastern rarities mentioned above. At the Isle of May a Pied Flycatcher, *ca.* 25 Goldcrests and (arriving after mid-day) *ca.* 75 Redwings were recorded

and there was also an influx at Spurn (likewise in the afternoon) of 30+ Blackbirds, 10+ Song Thrushes and *ca.* 50 Redwings. Some Fieldfares flew in from the sea at Cley. A Yellow-browed Warbler was at Fair Isle on the 2nd.

The only other drift movement noted was on 3rd October. This took place in the south-south-easterly airstream to the west of an anticyclone over central Europe. Drift to Spurn and Gibraltar Point (it was not noted further north) may have come from the Dutch coast and was on a moderate scale. The birds noted at Spurn were a Bluethroat, an Ortolan Bunting, a Redstart, three Black Redstarts, two Pied Flycatchers and the first Fieldfares of the autumn. At Gibraltar Point a Ring Ouzel, Blackbirds, Redwings and Song Thrushes were involved. Further south there was a movement at Dungeness that was probably due to the same influences. The Observatory was "at home" to the B.T.O. Bird Observatories Committee and exhibited to its members six Firecrests, an Ortolan Bunting, two Siskins and a small peak of Redstarts.

The first sizeable immigration of winter visitors in 1954 was recorded at Fair Isle on 8th October when 5,000+ Continental Redwings (*T. m. musicus*) and 50+ Song Thrushes were seen. An anticyclone over Norway brought conditions suitable for emigration, but the birds crossing the North Sea met southerly winds in advance of an occluded front moving eastwards across Scotland and were swept northwards to Fair Isle. A small movement on 9th October of Blackbirds, Song Thrushes and Redwings at Monks' House, Spurn and Gibraltar Point was probably due to redetermined passage from this immigration, since North Sea winds were by then westerly. The Fair Isle birds were noted as having almost all left the island on the 9th.

Southerly passage of Swallows, Meadow Pipits, Skylarks and finches continued and was noted especially at Spurn on 25th September (Swallows in large numbers and 445+ House Martins—an unusually large passage), 2nd-4th October and 15th-16th October; and at Gibraltar Point on 23rd September (the only substantial Skylark passage there of the autumn) and on the 29th (*ca.* 3,000 Swallows). At Cley westerly passage of Lapwings occurred on 23rd September, of Lapwings, Starlings and Skylarks on 8th October and of Lapwings, Chaffinches and Redwings on 15th October. Chaffinch passage continued strongly until the 23rd. Arrivals of Iceland Redwings (*T. m. coburni*) were noted at Fair Isle on the 11th and 14th.

Other noteworthy birds recorded during the period were as follows. At Fair Isle a Bluethroat and a Greenland Redpoll on 23rd September, Scarlet Grosbeaks on 26th September and 2nd and 6th October, an Icterine Warbler on 7th October, the eighth Barred Warbler trapped of the autumn on the 8th, a Short-toed Lark, probably of the Eastern race, for some days previous to the

9th and another on the 11th (see p. 457), a Little Bunting on the 8th, Greenland Redpolls on the 11th and 14th and a Siberian Lesser Whitethroat on the 15th. At Monks' House a Northern Treecreeper on 12th October (see *antea*, pp. 92-93). At Spurn a probable Tawny Pipit on 4th October and a Red-breasted Flycatcher on the 8th. A Dowitcher was seen at Scolt Head on October 14th (see *antea*, p. 138).

15th-26th October.

During this period the weather remained westerly and, except for a large and widespread immigration of winter visitors on 15th-17th October and an immigration to Monks' House only on the 23rd, no movements were recorded.

The movement of 15th-17th October was first noted at Monks' House on the 15th when there was an immigration of Turdidae, at Spurn where 500+ Blackbirds came in during the afternoon of the 16th, at Cley where many Redwings came in from the sea on the same day, and at Fair Isle where *ca.* 500 Blackbirds and many Song Thrushes and Redwings were recorded. A very few Continental Robins and a Great Grey Shrike were also recorded at Fair Isle on this day. On the 17th the immigration was really under way. Immigration, including the first arrival in strength of Fieldfares, continued at Fair Isle and thousands of Redwings, many Fieldfares and Song Thrushes and hundreds of Blackbirds reached the Isle of May, where on the next day a Great Grey Shrike was also seen. Immigrations of the same species were noted on this day at Spurn (3,000+ Redwings, 800 Fieldfares and 500+ Blackbirds) and Cley (many Blackbirds and a few Song Thrushes). Gibraltar Point was not manned at this time. The movement was released by the passage of warm fronts up the North Sea on the 15th and 17th, the barometer rising over Scandinavia (see Fig. 5).

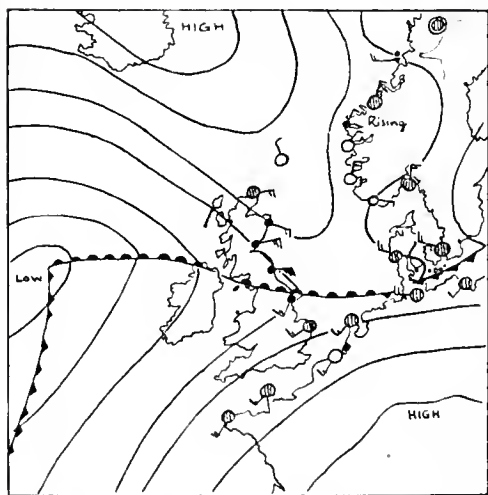


Fig. 5. Midnight, October 16th-17th, 1954.

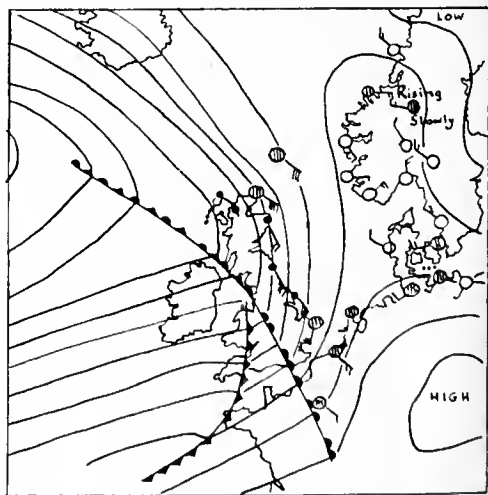


Fig. 6. Midnight, October 26th-27th, 1954.

At Fair Isle a Greenland Redpoll occurred on 20th October, a Continental Dunnock and a Great Grey Shrike on the 21st and redetermined passage of Turdidae and arrivals of Iceland Redwings from the 21st to the 25th.

27th October-mid-November.

This was the period of peak immigration of winter visitors and from 27th October to 7th November immigrations were noted almost daily. On 27th October enormous numbers were noted on a wide front. The synoptic weather-chart for midnight on the night of the 26th/27th is shown in Fig. 6. It will be seen that birds, setting off in conditions favourable to migration in Scandinavia, met strong westerly winds in advance of a warm front moving up the North Sea. Fair Isle recorded a big influx of Turdidae, a few Continental Robins and a Great Grey Shrike, with a Chaffinch of the Central European form (*F. c. hortensis*) and a Little Bunting next day. At the Isle of May thousands of Blackbirds, Redwings and Fieldfares with several hundred Song Thrushes were recorded. At Monks' House Fieldfares were the most numerous species. At Spurn Starlings (2,000+), Redwings (1,200+) and Fieldfares (1,000+) predominated. At Gibraltar Point Redwings (1,000+), Fieldfares and Starlings (1,000's) predominated and 300 Woodpigeons came on the 28th. In view of the movement that was going on it seems possible that these were immigrants from the Continent. At Cley Starlings, Blackbirds, Redwings and Fieldfares all arrived in enormous numbers.

Immigration continued on a reduced scale for the next eight days, being noted chiefly at Spurn, Gibraltar Point and Cley. The Turdidae were less in evidence except on the 2nd and the species concerned were chiefly Starlings, Lapwings and finches. Southerly coastal passage of finches and Starlings was also noted on most days. Some 50 Carrion Crows passed at Gibraltar Point on 29th October and there was a westerly movement of Rooks and Meadow Pipits at Cley on the 28th and of Skylarks on the 29th. A late Blackcap was seen at Spurn on 1st November and a Black Redstart and a Great Grey Shrike there on the 2nd.

On 6th November another very large scale immigration took place. It was noted at Monks' House on a moderate scale on the previous day, but the main centre of it appears to have been from Spurn to Gibraltar Point. The birds came in on a strong northeasterly wind following a calm day on the 5th when little migration was seen. At Spurn 2,000+ Blackbirds were estimated to be on the peninsula with smaller numbers of Starlings (*ca.* 600), Redwings, Fieldfares, Skylarks and finches, and a late Garden Warbler and a Great Grey Shrike. They started to arrive between 7.0 and 8.0 a.m. On the following day a Blackcap, a very late Red-backed Shrike, a Chiffchaff, a Lapland Bunting and a Bluethroat were recorded. At Gibraltar Point, too, Blackbirds predominated (*ca.*

2,000 on the Nature Reserve) with large numbers of Starlings, Redwings and Lapwings and smaller numbers of Chaffinches and Bramblings. Very large numbers of Blackbirds were noted on the Wash on the 7th, a large W.S.W. passage crossing the Wash at sunset from Snettisham beach. Over 2,000 were counted in eight minutes over a narrow front. Only the fringe of the movement appears to have reached Cley. Large numbers of Redwings and a fall of Woodcock were noted there on the 6th but only a moderate increase of Blackbirds. A moderate immigration of Blackbirds was also noted at Walberswick, Suffolk.

On the previous evening, 5th November, D. A. Vleugel observed a number of Turdidae, principally Blackbirds, leaving the Dutch coast at the Hague. This observation, unique in the observer's experience, was made during the fifteen minutes following sunset. The birds left the coast flying in a W.S.W. direction.

Of the 282 Blackbirds ringed at Spurn on 6th November, three were recovered in the next four months. One was recorded in Lancashire on 17th November and another in Lincolnshire in early March 1955—wintering in Britain according to plan. The third, however, which was recovered only four days later (10th November) near Oldenburg in Western Germany must produce a feeling of decent humility in the present author and, he hopes, in other students of bird-migration.

Blackbirds ringed at Gibraltar Point on 6th and 7th November were recovered in Varmland, S. Sweden, and near Utrecht, Holland, during the first half of April 1955.

Later observations are rather scattered, many of the Observatories no longer being continuously manned. Noteworthy are an arrival of *ca.* 500 Blackbirds and a Pine Grosbeak (see *antea*, pp. 133-134) at the Isle of May on 8th November, a large arrival at Fair Isle of Blackbirds and Redwings on the same day, a large westerly passage of Lapwings at Cley on the 9th and a movement of Lapwings, Fieldfares and Blackbirds at Spurn on the 16th.

III—SUMMARY OF MOVEMENTS

A—Spring

March 21st-28th: Southerly passage of Chaffinches etc. at Spurn and Gibraltar Point.

April: Westerly weather. Little movement.

May 1st-5th: Cyclonic drift to all stations.

May 6th-12th: Redetermined passage and anticyclonic drift from S.E. Europe.

May 13th-31st: Little movement.

B—Autumn

See Tables 1, 2 and 3.

TABLE 1. DRIFT MOVEMENTS TO BRITAIN

Period	Date of movement	Type of movement	Probable origin of movement	Fair Isle	Isle of May	Monks' House	Spurn	Gibraltar Point	Clay	Dungeness
Aug. 1st-19th	10th	C	Skagerrak	X						
Aug. 20th-22nd	20th 21st-22nd	C C+A	W. Norway Denmark— Holland	XX XX	— —	XX	X XX	X XX	X XX	X
Aug. 23rd-26th	23rd-24th 25th 26th	R C A	R W. Norway ? (?R)	R XX	— —	R	X	R X	R X	
Aug. 27th-31st		R	R	R	R	R	R	R	R	
Sept. 1st-17th	3rd-4th 6th-7th 10th	C C R	Skagerrak N.W. Germany ? Faeroe	X X R	X XX	X				
Sept. 17th-19th	17th 17th-19th	C C(E)	W. Norway Greenland	X X					X?	
Sept. 20th-Oct. 15th	20th 21st 28th 1st 3rd 9th	R C C(E) C A R	R W. Norway Greenland Scandinavia Holland R	R X X X	X	R	X X R	X R	— —	X

KEY: C = Cyclonic movement (westwards to north of depression).
 C (E) = Cyclonic movement (eastwards to south of depression).
 A = Anticyclonic movement (westwards to south of anticyclone).
 R = Redetermined passage of birds drifted earlier.
 X = Migratory movement (strength of movement shown by number of X's).
 — = Observatory not manned.

TABLE 2. COASTAL PASSAGE PEAK MOVEMENTS.

(NOTE :—Smaller scale passage movements noted on many days from early August).

<i>Date of movement</i>	<i>Monks' House</i>	<i>Spurn</i>	<i>Gibraltar Point</i>	<i>Cley (westerly)</i>
Aug. 26th	XX			
„ 27th		XX	X	
„ 28th		X	XXXX	
„ 29th			XXX	
„ 30th			X	XXX
„ 31st				XXX
Sept. 3rd-5th ...			XX	
Sept. 11th		X	XXXX	
„ 12th		XXX	XXX	
„ 13th	XX		XX	
„ 14th			XX	
„ 15th			X	
„ 16th			X	
Sept. 17th... ..	XX			
Sept. 23rd... ..			X	XX
„ 25th		XXX		
„ 29th			XX	
Oct. 2nd-4th ...		XX		
„ 8th				XX
„ 15th-16th ...		XX		XXX

TABLE 3. IMMIGRATIONS OF WINTER VISITORS.

<i>Period</i>	<i>Date of movement</i>	<i>Fair Isle</i>	<i>Isle of May</i>	<i>Monks' House</i>	<i>Spurn</i>	<i>Gibraltar Point</i>	<i>Cley</i>
Sept. 20th- Oct. 15th	Oct. 8th	XXXX					
Oct. 15th-26th	15th 16th 17th	XX XXX	XXXX	XX	X XXX	—	XXX
Oct. 27th- mid-Nov.	27th 28th-5th 5th-6th 8th	XXX XXX	XXXX XX	XXX XX	XXX X XXXX	XXX XX XXXX	XXXX XX XX

IV—DISCUSSION

Study of the migrational movements recorded on the East Coast of Britain in autumn 1954 confirms the general picture that was found in 1953 (see *antea*, vol. xlvii, pp. 423-431), that there are four kinds of autumn migrants, viz:—

- i. Drift migrants across the North Sea.
- ii. Migrants from Greenland and Iceland.
- iii. Coastal passage migrants.
- iv. Winter immigrants to Britain.

A study of the drift movements across the North Sea in 1954 reveals a feature that may well be constant. It is true of 1953 as well as of 1954, but the results of many seasons' work will be necessary to show whether it is always so. This feature is that drifts of the cyclonic type (i.e. on easterly winds to the north of a depression) most usually bring birds to the more northerly stations. Drifts of the anticyclonic type (i.e. on easterly winds to the south of an anticyclone) bring falls of birds to all or any of the Observatories according to the location of the anticyclone. This is shown by examination of the summary above of autumn drift movements in 1954. The explanation of this may be that cyclonic drifts usually take place in advance of a depression or of a front that is moving fairly rapidly northwards up the North Sea. This movement of the depression may, as it were, push the birds before itself while at the same time drifting them westwards, with the result that they are carried up into the north-west corner of the North Sea. This is particularly likely to happen if drift originates, as it so often does, from the sea-crossing of the Skagerrak. It may, however, be that a false picture is given by the fact that both of the northernmost Observatories happen to be on islands. An island acts as the focal point for drifted birds from a wide catchment area, the birds altering course to make their landfall on the island as soon as they sight it. Birds approaching a coastline, by contrast, are attracted by no such focal point and make their landfalls on a broad front. Moreover birds landing on a small island are forced to rest within the confines of a relatively small area and are therefore much more likely to be recorded by the observers on the island. Birds landing on the mainland may soon move inland and in any case, being less concentrated, are easily overlooked. It may be, therefore, that minor movements—and cyclonic movements, since the conditions leading to them are usually of brief duration as the depression or front moves on its course, are usually on a small scale—are often overlooked and go unrecorded at mainland Observatories.

A feature of the drift migrations recorded in autumn 1954 which has not been recorded, or only rarely recorded, in recent seasons was that a number of cyclonic drifts appear to have had their

origin along the west coast of Norway rather than at the Skagerak sea-crossing and southward. Examples of this occurred on 20th August (see Fig. 1) and on the 25th, also on 17th and 21st September. All of these movements were noted principally at Fair Isle.

Another feature worthy of note is the large number of Barred Warblers recorded in autumn 1954 (see Table 4).

TABLE 4. BARRED WARBLERS IN AUTUMN 1954.

<i>Date</i>	<i>Fair Isle</i>	<i>Isle of May</i>	<i>Monks' House</i>	<i>Spurn</i>	<i>Gibraltar Point</i>	<i>Cley</i>
Aug. 10th ...	1					
Aug. 18th-19th ...	1					2
Aug. 20th-22nd ...			2	1	1	2
Aug. 23rd-24th ...			1			3
Aug. 25th-26th ...	2			3		
Aug. 28th-29th ...	1	1				
Sept. 3rd-4th ...	3					
Sept. 7th ...	1		1			
Sept. 10th ...	1					
Sept. 22nd ...	1					1-2
Oct. 8th ...	1					

The Barred Warbler is not a northern species and, apart from a few pairs in the Oslofjord region, does not breed in Norway, its breeding range being more Baltic and central European. In view of the generally westerly character of the weather in autumn 1954 it is remarkable that such a large number should have reached Britain. It will be seen, however, that most of the birds occurred in the last eleven days of August, the period when the only large-scale anticyclonic drift of the autumn took place.

It is perhaps interesting that the Red-breasted Flycatcher with a rather similar distribution was recorded at the East Coast Observatories only once (at Spurn on 8th October) and the Yellow-browed Warbler, a bird with a far eastern breeding-range but one that has been recorded rather regularly at the East Coast Observatories in recent years, was noted only at Fair Isle (a single bird on 2nd October).

Coastal passage, particularly of Swallows, was noted on a much larger scale in 1954 than in 1953 and with a much greater degree of coincidence between the peak movements seen at the different Observatories. The autumn of 1954 will long be remembered for its number of wet and windy days. It is probable that these days inhibited movement and that changes to clearer skies and lighter winds (see Fig. 3) released these big movements of migrants that had previously been held up by the bad weather.

Mention should also be made of the unusual scarcity of Hooded Crows which was noted at Spurn, Gibraltar Point and elsewhere

on the Lincolnshire coast, and at Cley. Cuckoos, too, were noted as being unusually scarce at Spurn.

To sum up the pattern of migration in 1954 as observed at the East Coast Observatories—in spring the “col” conditions that lead to large-scale drift did not develop and only during 1st-5th May was drift (of the cyclonic type) noted. Anticyclonic drift during 8th-12th May did not bring any big falls of birds on the East Coast. In autumn the weather was consistently westerly and unusually wet. The only anticyclonic drift occurred on 21st-22nd August, but a number of cyclonic drifts were noted. Hold-ups of coastal passage-migrants followed by large peak movements were recorded. Major immigrations of winter visitors were recorded on October 8th, 15th-17th and 27th and on November 5th-6th and 8th.

ACKNOWLEDGEMENTS AND NOTES

Information has kindly been sent by the officials of all the East Coast Observatories. Fuller information has been or will be published in their annual reports. Reports from Cley include those from the Observatory's new location at Blakeney Point, but for the sake of brevity these are not differentiated and “Cley” must be interpreted as meaning the stretch of coastline from Blakeney to Cley. Full information was sent by the Dungeness Observatory. Many movements were recorded there, but to have described them all would greatly have increased the length and complexity of this paper. Only those, therefore, which appear to bear some relationship to happenings further north are described here.

APPENDIX—Scientific names of species mentioned in the text

Heron (<i>Ardea cinerea</i>)	Grasshopper Warbler (<i>Locustella naevia</i>)
Little Egret (<i>Egretta garzetta</i>)	Aquatic Warbler (<i>Acrocephalus paludicola</i>)
Squacco Heron (<i>Ardeola ralloides</i>)	Icterine Warbler (<i>Hippolais icterina</i>)
Spoonbill (<i>Platalea leucorodia</i>)	Blackcap (<i>Sylvia atricapilla</i>)
Baikal Teal (<i>Anas formosa</i>)	Barred Warbler (<i>Sylvia nisoria</i>)
Pintail (<i>Anas acuta</i>)	Garden Warbler (<i>Sylvia borin</i>)
Kestrel (<i>Falco tinnunculus</i>)	Whitethroat (<i>Sylvia communis</i>)
Lapwing (<i>Vanellus vanellus</i>)	Siberian Lesser Whitethroat (<i>Sylvia curruca blythi</i>)
Woodcock (<i>Scolopax rusticola</i>)	Willow Warbler (<i>Phylloscopus trochilus</i>)
Stilt Sandpiper (<i>Micropalama himantopus</i>)	Chiffchaff (<i>Phylloscopus collybita</i>)
Spotted Redshank (<i>Tringa erythropus</i>)	Wood Warbler (<i>Phylloscopus sibilatrix</i>)
Dowitcher (<i>Limnodromus griseus</i>)	Arctic Warbler (<i>Phylloscopus borealis</i>)
Little Stint (<i>Calidris minuta</i>)	Yellow-browed Warbler (<i>Phylloscopus inornatus</i>)
Temminck's Stint (<i>Calidris temminckii</i>)	Goldcrest (<i>Regulus regulus</i>)
Curlew Sandpiper (<i>Calidris testacea</i>)	
Buff-breasted Sandpiper (<i>Tryngites subruficollis</i>)	

- Ruff (*Philomachus pugnax*)
 Wilson's Phalarope (*Phalaropus tricolor*)
 Little Gull (*Larus minutus*)
 Black Tern (*Chlidonias niger*)
 Woodpigeon (*Columba palumbus*)
 Cuckoo (*Cuculus canorus*)
 Wryneck (*Jynx torquilla*)
 Short-toed Lark (*Calandrella brachydactyla*)
 Skylark (*Alauda arvensis*)
 Swallow (*Hirundo rustica*)
 House Martin (*Delichon urbica*)
 Carrion Crow (*Corvus corone*)
 Hooded Crow (*Corvus cornix*)
 Rook (*Corvus frugilegus*)
 Jackdaw (*Corvus monedula*)
 Northern Treecreeper (*Certhia f. familiaris*)
 Black-bellied Dipper (*Cinclus c. cinclus*)
 Siberian Thrush (*Turdus sibiricus*)
 Fieldfare (*Turdus pilaris*)
 Song Thrush (*Turdus philomelos*)
 Redwing (*Turdus musicus*)
 Ring Ouzel (*Turdus torquatus*)
 Blackbird (*Turdus merula*)
 Wheatear (*Ænanthe ænanthe*)
 Whinchat (*Saxicola rubetra*)
 Redstart (*Phœnicurus phœnicurus*)
 Black Redstart (*Phœnicurus ochruros*)
 Bluethroat (*Cyanosylvia svecica*)
 Continental Robin (*Erithacus r. rubecula*)
 Firecrest (*Regulus ignicapillus*)
 Spotted Flycatcher (*Muscicapa striata*)
 Pied Flycatcher (*Muscicapa hypoleuca*)
 Red-breasted Flycatcher (*Muscicapa parva*)
 Continental Dunnock (*Prunella m. modularis*)
 Meadow Pipit (*Anthus pratensis*)
 Tawny Pipit (*Anthus campestris*)
 Tree Pipit (*Anthus trivialis*)
 Red-throated Pipit (*Anthus cervinus*)
 Pied/White Wagtail (*Motacilla alba*)
 Yellow Wagtail (*Motacilla flava*)
 Yellow-headed Wagtail (*Motacilla citreola*)
 Great Grey Shrike (*Lanius excubitor*)
 Red-backed Shrike (*Lanius collurio*)
 Starling (*Sturnus vulgaris*)
 Goldfinch (*Carduelis carduelis*)
 Siskin (*Carduelis spinus*)
 Linnet (*Carduelis cannabina*)
 Greenland Redpoll (*Carduelis flammea rostrata*)
 Scarlet Grosbeak (*Carduelis erythrinus*)
 Pine Grosbeak (*Pinicola enucleator*)
 Chaffinch (*Fringilla cœlebs*)
 Brambling (*Fringilla montifringilla*)
 Ortolan Bunting (*Emberiza hortulana*)
 Little Bunting (*Emberiza pusilla*)
 Lapland Bunting (*Calcarius lapponicus*)
 Snow Bunting (*Plectrophenax nivalis*)

SPECIAL REVIEW

By D. D. HARBER

THE BIRDS OF THE SOVIET UNION. Under the general editorship of G. P. Dementiev and N. A. Gladkov. (*State Publishers "Soviet Science"*, Moscow, 1951-54). 6 vols. (In Russian).

CONTENTS OF VOLUME 5 (1954; 803 pages)*

VOLUMES 5 and 6 are devoted to the Passerines. It is to be noted with regret that the present volume shows little evidence of recent study of many of the birds which it covers. Moreover, it contains an undue number of careless mistakes and inaccuracies, most, if not all, of which could surely have easily been eliminated.

The Corvidae are by A. K. Rustamov. The Raven (*Corvus corax*) sometimes nests on towers, belfries and high buildings. The race *tshusii* of the Rook (*C. frugilegus*) is rejected and the typical race is given as extending across Siberia to Krasnoyarsk and Minusinsk. The birds of eastern Siberia and northern Mongolia belong to another race, *centralis*, separated by Tugarinov in 1928. However, the author suggests that this is a hardly distinguishable form very similar to the race *pastinator* which is shown on the map as inhabiting Japan only, but which, according to the text, is also found in Korea, part of Manchuria and part of China. Although they do a certain amount of harm, Rooks "on the whole are birds unquestionably useful to agriculture and forestry". The typical race of the Magpie (*Pica p. pica*) is found in the Soviet Union only in the extreme south-west. Most of the rest of European Russia is occupied by the race *fennorum* which meets the race *bactriana* to the east of Kostroma, Tambov and Kharkov. By some mischance the map showing the distribution of the Jay (*Garulus glandarius*) gives the British race, *rufitergum*, as inhabiting not only England and Scotland but also the central Urals! This species also is regarded as in general useful to Man except that the author suspects that it may do some harm by destroying the nests of small insectivorous birds.

The Thick-billed Nutcracker (*Nucifraga c. caryocatactes*) breeds as far east as the Urals. But it is stated little is known about the details of its nesting in the Soviet Union and the authorities quoted are Menzbier (1895), Niethammer and *The Handbook*. The Slender-billed Nutcracker (*N. c. macrorhynchus*) breeds from the Urals to the Far East. This bird thus occupies a huge area within which it is described as common or abundant in a number of localities. It is therefore all the more surprising to learn that its nest has not been described and that the number of eggs it lays remains unknown. Subsidiary foods of this bird are various berries, small Passerines and their eggs, certain amphibians and reptiles.

* Discussions of the contents of volumes 1, 2, 3 and 4 appeared in previous issues on pages 221-224, 268-276, 313-319, 343-348 and 404-410.

The Sturnidae are by E. P. Spangenberg. The Starling (*Sturnus vulgaris*) is regarded as a useful bird by the Russians owing to the number of insect pests which it eats. It is stated that in the northern parts of their range and also in the Moscow, Kalinin and Yaroslav districts most Starlings breed in nesting-boxes specially put out for them. The Rose-coloured Starling (*S. roseus*) is highly esteemed owing to its habit of feeding on locusts. It has been shown that it will eat two and a half times its own weight of these in a day and it has been seen to go on killing them when it could eat no more. True, after the young have flown it will visit orchards and eat grapes "but only if the vineyards are not protected by Man". Foods of this species not mentioned in *The Handbook* are spiders, molluscs and the seeds, stalks and leaves of weeds.

The Oriolidae are by M. N. Korëlov. The Golden Oriole (*Oriolus oriolus*) "is one of the most useful birds of our fauna", despite its fruit-eating habits. It will establish itself in the plantations designed for purposes of field protection and in public parks and gardens and will eat enormous numbers of insects.

The Fringillidae start with the hawfinches by N. N. Gorehakovskaya. The races *verticalis* and *japonicus* of the Hawfinch (*Coccothraustes coccothraustes*) are rejected. The rest of this family are by the late L. B. Boehme (Beme). It is to be noted that he includes a sub-heading, song, under the heading "Field-characteristics". The range of the Siskin (*Carduelis spinus*) consists of two separate areas: one extending from the European part of the Soviet Union as far as Omsk and the other in the Far East. Between them there are only a few isolated colonies. Despite the common occurrence of this species, "its ecology and breeding have been studied very inadequately". The typical race of the Twite (*C. f. flavirostris*) breeds in the tundras of the Kola Peninsula where it is common. The Serin (*Serinus canarius serinus*) nests along the whole western border of the Soviet Union and in 1948 and 1949 breeding occurred near Kiev.

The Siberian Bullfinch (*Uragus sibiricus*) is given as a genuine wild visitor to Britain (Sussex) on the authority of Molineux (1930), but this record (3 shot, Little Common, near Bexhill, 11th February 1919) has quite rightly never been accepted in this country. The typical race of the Bullfinch (*Pyrrhula p. pyrrhula*) extends across Siberia to southern Yakutia. The incubation period of the typical race of the Scarlet Grosbeak (*Carpodacus e. erythrinus*) is 13-14 days. According to the observations of Blagosklonov the young are fed by the male, who also feeds the female, and the fledgling period is 14-17 days. The typical race of the Pine Grosbeak (*Pinicola e. enucleator*) breeds in the Soviet Union only on the Kola Peninsula and in northern Karelia. Other forms extend across Siberia and reach as far south in the mountains as Mongolia. The incubation period of the Crossbill (*Loxia curvirostra*) is said to be 14-16 days. The Scottish Crossbill (*L. c. scotica*) is

considered a race of the Parrot Crossbill (*L. pytyopsittacus*). However, the map showing the distribution of this latter species does not show Scotland as part of its breeding area and the Scottish race is made to inhabit the eastern waters of the North Sea! The breeding of the Parrot Crossbill has been "insufficiently studied and there are no precise data". We are told that the Crossbill (*L. curvirostra*) does not extend so far north in Siberia as in Europe "yielding, apparently the northern zone of the taiga to the Two-barred Crossbill, with which it meets only in places (Portenko, 1937)". But the maps of the two species show the area of the Two-barred Crossbill (*L. leucoptera bifasciata*) as largely coinciding with that of the Crossbill and, on the whole, as extending less far to the north except in the region of two of the tributaries of the Lena. The Two-barred Crossbill has nested in the Moscow district and elsewhere in European Russia to the south of its normal range. In Siberia it reaches the Lena and the Amur. It appears to be most numerous over the eastern part of its range. It is stated that its breeding has been very little studied and this certainly seems to be the case since the only nest described is one found near Moscow in 1916. Its food includes small numbers of aphides, spiders, caterpillars, etc.

The Chaffinch (*Fringilla cœlebs*), where suitable conditions exist, occupies first place as regards numbers amongst the small birds in the Soviet Union. The Brambling (*F. montifringilla*) nests as far south as the Moscow district. The Ploceidae are by A. M. Sudilovskaya. The House Sparrow (*Passer domesticus*) is regarded as considerably less harmful to agriculture than the Tree Sparrow (*P. montanus*) which is a very numerous species in the Soviet Union. However, something is said in favour even of the latter as a destroyer of insects and weed seeds.

The Emberizidae are regarded as a family and are, except for two vagrants from America which will not concern us here, by E. P. Spangenberg and A. M. Sudilovskaya. It is very doubtful whether the Corn Bunting (*Emberiza calandra*) breeds in south-west Siberia as stated in *The Handbook*. It is unclear whether it does so on the lower Volga as there is apparently little information concerning its status in this district since Eversmann (1866). The total number of Yellowhammers (*E. citrinella*) in the Soviet Union is stated to be "enormous". But when its breeding times in European Russia are given the authorities quoted are dated 1898, 1917, 1879, 1911, 1913 and 1904. The Pine Bunting (*E. leucocephala*) apparently does not nest in Europe, its area being eastwards from the Urals and including Sakhalin. Its total numbers are "very considerable", but little is known about its breeding.

The Red-headed Bunting (*E. bruniceps*) has been found in the breeding-season in the southern part of the area between the Volga and the Ural, this apparently being the western limit of its range. Over most of its area it is one of the commonest birds. The young

are fed with insects, but the adults eat seeds and grain. The Yellow-breasted Bunting (*E. aureola*) has an incubation-period of 13 days and the young leave the nest when 13-14 days old. There is very little known about its food, but according to Pavlov (1948) it feeds exclusively on insects and their larvae during the breeding-season. The Cirl Bunting (*E. cirlus*) has not recently been reliably recorded in the Soviet Union though there are a few old records, some of breeding. The Ortolan Bunting (*E. hortulana*) does not nest in Tadzhikistan and Uzbekistan. Its numbers in its breeding-area are "enormous". The East Siberian Meadow Bunting (*E. cioides castaneiceps*) breeds, it is stated, throughout eastern China. *The Handbook* gives China only as its wintering area, but according to the present work it is sedentary though some descend into the valleys in winter. The authors give the Japanese form (*E. c. ciopsis*) as having been obtained in Yorkshire in 1886 whereas, of course, this bird which still, apparently, maintains a (precarious) position on the British List was of the former race. It is to be noted that the Japanese form is also given as sedentary.

The map of the distribution of the Rustic Bunting (*E. rustica*) includes the Aleutians in its breeding range whereas the text gives these islands only as a locality where it has occurred casually. Manchuria, Korea, Japan and eastern China are given as the wintering area of this species and it is stated to occur in Persia and central Asia only as a casual visitor. Unfortunately, as is the case with a number of other species in this volume, the wintering area is not marked on the map. According to Portenko (1939) both sexes of the Little Bunting (*E. pusilla*) incubate. The Western and Eastern Large-billed Reed Buntings are united to form a single race, *E. schoeniclus intermedia*. In the Soviet Union this race breeds in Moldavia, the southern Ukraine, the Crimea, and, according to Portenko, on the Black Sea coast of the Caucasus. This race is stated to be sedentary in the Balkans and it is believed to be so in the Soviet Union.

The Lapland Bunting (*Calcarius lapponicus*) breeds on Jan Mayen and Franz Josef Land. Mikhciiev (1939) is the source of most of the information given about the breeding of this species. He studied it in the Timan tundra and its incubation period (apparently in this locality) is given as 10 days while Gizenko on the Taimyr Peninsula found it only 8-9 days. The heading "Field-characteristics" is left out of the account of the typical race of the Snow Bunting (*Plectrophenax n. nivalis*). In that of the race *townsendi* there is such a heading, but the authors confine the information given under it to the unhelpful remark that the field-characteristics of this form "are the same as in the case of the nominate sub-species".

The Alaudidae are the work of I. B. Volchanetski. These birds, he points out, destroy many insect pests and are thus most useful. True, they will also eat grain but, as a rule, "rarely and in very

small quantities". Moreover, there is no evidence that they take it from normally growing crops and when they take it from the ground "they do only good by seriously competing with rodents". Again, weed seeds will pass through larks unchanged and thus attain a wider distribution, but "modern methods of combating weeds are aimed, among other things, at not allowing weeds to seed and they also foresee the destruction of weeds in all their reserve growing places".

The Skylark (*Alauda arvensis*) properly belongs to the steppe zone but has extended its range north into the forest zone with the growth of agriculture. Incubation is stated to last 14 days though *The Handbook* gives 11. The Crested Lark (*Galerida cristata*) is sedentary where the ground is covered with snow for less than 144 days in the year (Stanchinski, 1926). It is much more common near human habitation than in the open steppe. Details are given of the insects etc. found eaten by Short-toed Lark (*Calandrella brachydactyla*) in various localities. Similar data are given under other species of larks. There is evidence that this bird can go for months without water. But where water is present it will visit it regularly and, like certain other larks, it will even drink saline water. Since it inhabits mainly uncultivated land it is "useful by destroying insect pests in their reserves".

The Black Lark (*Melanocorypha yeltoniensis*) in winter moves far from its breeding area, not only to the south but also to the north. There are several winter records for the Moscow district. There are more males than females of this species. Its incubation period is 15-16 days. The White-winged Lark (*M. leucoptera*) is in general less numerous than other larks though it appears in large flocks on migration and in winter. The female alone incubates and the period is 12 days. From 80% to 90% of its food in summer consists of insect pests. The female only of the Calandra Lark (*M. calandra*) incubates, the period being 16 days. The young are fed in the nest for 10 days. Reshetnik (1937) states that unripe grain has been found in birds of this species. But no one has ever seen them knock down or bend over the stalks of cereals and peck out the grain. Evidently it is only possible for them to do this in the case of very low-growing cereals or if the latter have been already flattened by another agency. Therefore they can do no serious harm and they destroy a multitude of insect pests. The Shore Lark (*Eremophila alpestris flava*) is stated to breed as far north as the north island of Novaya Zemlya though the map shows only the south island as occupied. It will sometimes build a completely open nest under a hillock.

The Motacillidae are by N. A. Gladkov. The typical race of the Grey Wagtail (*Motacilla c. cinerea*) breeds in the Soviet Union only in the Carpathians, the Crimea and the Caucasus. The race *caspica* (*melanope*) breeds from the Pechora eastwards across Siberia. Little study seems to have been given to any of the three

rates of the Yellow-headed Wagtail (*M. citreola*) breeding in the Soviet Union. The eastern boundaries of the area of the typical race have not been fully worked out. In the northern part of its area, where it is common, it is a bird of the tundra but in the southern part it inhabits the alpine zone and the upper part of the forest zone of mountains and here it is more or less sporadic. It lays 4-5 eggs, but little is known about its breeding dates and nothing about its incubation. All that is known about its food is that Buturlin (1913) found various insects in one which he obtained.

Details are given of the distribution of the various races of *M. flava*. However, it is suggested that the situation with regards to these needs clarification and that eventually a number will perhaps have to be merged together. *M. f. lutea* and *M. f. taiwana* cannot, it is stated, be considered as sub-species of *M. flava* since they have common areas with some of these latter. Consequently they are regarded as forming a distinct species (*M. lutea*) of which our Yellow Wagtail (*M. f. flavissima*) is considered a race. It must be mentioned that there is a very striking coincidence between the area of Sykes's Wagtail (*M. f. beema*) and that of *M. f. lutea*.

The wintering area of Richard's Pipit (*Anthus richardi*) is stated to be India, Ceylon, Burma and southern China (the Philippines are also included on the map though not mentioned in the text). More westerly winter occurrences, though numerous, are regarded as casual. Although this species breeds mainly in damp localities it does so also in dry valleys on the Vitim plateau. This is in places a very common bird, but "the circumstances of incubation and its length remain unknown". The Tawny Pipit (*A. campestris*) breeds as far north as the Chernigov, Kursk and Voronezh districts. The author is not certain whether it breeds in the Tula district (about 100 miles south of Moscow). A separate race, *godlewskii* larger than the others, occupies the area to the east and south of Transbaikalia.

The Tree Pipit (*A. trivialis*) has recently (Vaskovski, 1951) been found breeding as far east as the upper Indigirka and Kolyma. Accurate information about the distribution of the Pechora Pipit (*A. gustavi*) is "very meagre". In fact the most recent authorities for its breeding on the Pechora seem to be Seeböhm and Harvie-Brown! Its numbers are stated to be small. A separate race, *menzbieri*, has been described on the basis of five specimens from Lake Khanka (Ussuria). The Meadow Pipit (*A. pratensis*) probably does not nest further east than the valley of the Ob. It is not given as breeding in Turkestan. In Europe it has been found nesting in the Kharkov district, but normally does not reach further south than the regions of Moscow and Ryazan. The Red-throated Pipit (*A. cervinus*) is not known with certainty to breed on Novaya Zemlya. A race, *rufogularis*, has been separated (rather doubtfully, according to the author) on the basis of wing length and occupies

the area west of the Taimyr Peninsula while the typical form ranges east to the Chukotsk Peninsula. Incidentally, this distribution is reversed on the map. The author has evidently studied the breeding of this species in the field. He gives its incubation-period as "10 days or a little longer" and states that the young remain in the nest 13 days. Its food has hardly been studied. It must be said that the field-characteristics for all the pipits are very inadequate, even for the present work. It is doubtful whether any species of pipit could be correctly identified in the field with their aid.

The Certhiidae, Sittidae and Paridae are the work of M. A. Voinstvenski. The area of the Continental Coal Tit (*Parus a. ater*) extends across Siberia to Kamchatka. The Northern Crested Tit (*P. c. cristatus*) incubates 15-17 days and the young remain in the nest about three weeks. The Northern Willow Tit (*P. atricapillus borealis*) breeds throughout the forest zone from the western frontiers of the Soviet Union to the Urals. The incubation-period of the race *russicus* of the Bearded Tit (*Panurus biarmicus*) is 15-16 days. The area of the Northern Long-tailed Tit (*Aegithalos c. caudatus*) extends across Asia to Sakhalin. Incubation is by the female only and lasts 12-13 days.

NOTES

Display of the Cattle Egret.—*The Handbook* records no display of the Cattle Egret (*Ardeola ibis*) except at nest-relief. The following account may therefore be of interest.

On 8th May 1951 near Daru, in eastern Sierra Leone, I saw five Cattle Egrets feeding together on an area of grass by the Moa River. I quote from my notes made at the time. "At intervals one or other advanced walking towards another bird and uttered as it did so a low 'kerr kerr', intermixed with a quieter, rather gabbling noise. The second bird then either turned and walked away, in which case it was sometimes pursued a little way, or it maintained its ground. In the latter event a sort of dance, with sparring, took place. Each bird in turn jumped vertically in the air about two feet, with outspread wings. This was done in quick succession three or four times, so that one bird jumped as the other came down. There was also a little ineffectual bill-sparring. On one occasion the bird that had just jumped came down on the other's back and a bit of a scuffle followed. This sparring and 'dancing' always finished with one bird turning and walking quickly away in a rather hunched position, being sometimes followed for a short distance by the other. In the middle of this activity another bird of the same species approached the group on the wing, carrying in its bill a small branching twig. As it got nearer, I could hear it uttering the 'kerr kerr' note. It

landed near another bird and dropped the twig on the ground; whereupon both indulged in the 'sparring dance' above described. The bird which brought the twig had, in a marked degree, the appearance of being in full breeding plumage. The other bird had, as far as could be seen in the field, no sign of breeding-dress and it was this one which walked away after the 'dance'. Others in the party were more or less in breeding-plumage."

This species is seen in Sierra Leone in the dry (non-breeding) season. In the latter part of April and in May it migrates to its breeding-areas, which Bannerman gives as being mostly north of latitude 10°N. (*The Birds of West and Equatorial Africa*, 1953, Vol I, p. 155). W. E. ALMOND

Golden Eagle at St. Kilda.—At about 9 p.m. on 26th May 1955 I was crossing from Gleann Mòr to Village Bay, Hirta, St. Kilda. While I was passing under Creagan Dubh a Peregrine (*Falco peregrinus*) flew out calling from the crags of Glacan Conachair. For a few moments it flew hither and thither over Amhuinn Mhòr and then disappeared over Mullaeh Mòr. Some five minutes later my attention was again attracted by the call of the Peregrine over the ridge between Mullaeh Mòr and Conachair. It was swooping upon a large bird which I had no hesitation in identifying as an eagle. It was about one and a half times the length of the Peregrine, and seemed quite unmoved by the attacks, side-slipping to avoid the swoops. The birds approached to within about 300 yards of my stance, and I was able to see clearly the long neck of the eagle projecting beyond the leading edge of the wing. I noted particularly that the tail was squarish and had none of the pointed or wedge-shaped effect of that of the White-tailed Eagle (*Haliaëtus albicilla*). The only light parts which I could distinguish were light under wing-coverts at the bend of the wing. I examined the tail carefully but saw no white. The eagle parted company with the Peregrine, glided off and seemed to descend upon something behind the ridge of Mullach Geal. The Peregrine disappeared over Conachair. At about 10 p.m., together with two other members of the party, Messrs. R. Turner and K. Beek, I watched an eagle soaring high above Mullach Mòr and Conachair. The bird was not seen again, but from the evidence I have confidence in recording it as a Golden Eagle (*Aquila chrysaëtos*), with which species I am very familiar. J. MORTON BOYD

Osprey in Hampshire in December.—In connection with M.C. Adams's note (*antea*, p. 279) on an Osprey (*Pandion haliaëtus*) in the Isle of Wight in December 1953, I should like to add that what was probably the same bird was seen by Mrs. C. F. G. Rogers at Keyhaven, Hampshire, two days later, on 7th December 1953.

EDWIN COHEN

Cyanistic egg of Curlew.—On 7th May 1955, on Wilpshire moor, near Blackburn, Lancashire, a cyanistic egg of the Curlew (*Numenius arquata*) was found, lying on the ground, in the vicinity of a roost which is annually used during the breeding season by some twenty birds. There was no sign of a nest or scrape. The egg was of the normal shape, measuring 69.5 mm. × 49.0 mm., and the blue colour entirely unmarked. It was subsequently found to be fresh and fertile. The shell is now in Bolton Museum.

W. G. HALE and G. WEBSTER

Overland movement of Redshank family.—On 28th May 1955, on Wilpshire moor, near Blackburn, Lancashire, the eggs of a pair of Redshanks (*Tringa totanus*) hatched, and the four young were colour-ringed, as had been the adults previously. On 30th May, at 11.30 hours the young were still in the vicinity of the nest and being attended by both parent birds. On 30th May, at 14.00 hours, the nesting-area was again visited, but both birds were absent and there was no sign of the chicks. I searched the surrounding moor, for a radius of about half a mile round the nest, with negative results. On 31st May, at a water-hole approximately a mile distant from the nest, I located the family of Redshanks, the colour rings making recognition positive. I found two of the four young.

During the journey, the family must have negotiated at least three dry walls, and probably a fourth, two roads, two tall, thick hedges and a wide ditch with a rush-covered fence at the far side. Whilst, in all probability, the young walked most of the way, they must have been carried over the walls and the rush-covered fence. Eventually, three of the young were fledged, both parent birds remaining with them at the water-hole throughout the period.

The carrying of chicks over obstacles is, I find, by no means unusual in the Redshank, and on 15th May 1954, at Parsonage Reservoir, near Blackburn, I watched a female bird carry three young, one at a time, over a six-foot wall. The chicks were apparently held between the legs and pressed up against the belly.

Whilst I have several records of less hazardous journeys of Redshank families which negotiated both roads and walls, I do not think that this journey differed from the usual short one in its object, which is, apparently, to get to the nearest suitable water-hole. Due to dry weather, this was a mile distant, and I am of the opinion that the adult birds located its situation before leading the young directly to it.

W. G. HALE

Status of Great Black-backed Gull inland in Scotland.—*The Handbook of British Birds*, Vol. v, p. 105, describes the Great Black-backed Gull (*Larus marinus*) as "infrequent inland". Baxter and Rintoul (*The Birds of Scotland*, 1953, p. 655) say that it is "occasionally seen on inland waters" in winter, with the qualifi-

cation that it is commonly seen inland in Kirkcudbrightshire at that season.

These two accounts present a quite misleading picture of this bird's status in south-east Scotland. In the Lothians Great Black-backed Gulls are widely distributed in winter, especially on the upland moors where they can always be seen singly or in pairs quartering the ground in search of carrion. Rubbish-dumps are also an attraction and up to 50 of these gulls may be gathered there at times. An indication of the numbers wintering in this area may be obtained from the size of the two inland roosts—at Gladhouse and Cobbinshaw Reservoirs, both in Midlothian and both lying 13 miles from the sea and 900 feet above it. At Gladhouse R. W. J. Smith and I have found that an average of 100 Great Black-backed Gulls come in to roost during the winter months, with up to 200 at times, adults being always very much in the majority. Up to half a dozen immature birds may be seen there throughout the summer. Very similar numbers were recorded roosting at Cobbinshaw by the Midlothian Ornithological Club in the early 1930's, so this is no recent development.

A. J. Smith tells me that the position is very much the same in the Border country. A roost near Selkirk, 35 miles from the sea, holds about 70 Great Black-backed Gulls during the winter months. Dead sheep, rabbits and salmon provide them with an adequate food supply, and they have also been recorded taking live rabbits as they emerge from rabbit burrows. In dealing with sheep carcasses, they have an advantage over the other carrion-eating birds in that they are strong enough to tear open the skin and get at the inside.

The Great Black-backed Gull is also to be seen regularly in winter in other parts of Scotland. E. A. Blake writes that "it is common throughout the winter in the southern Highlands and especially so on the moors and foothills though it also occurs regularly high up on the mountains. In Argyll it occurs far inland in winter and high up in cloud-filled corries. Its distribution is that of the Black-faced Sheep."

D. G. ANDREW

Cuckoo eating whole clutch of Dunnock's eggs.—In 1954 a young Cuckoo (*Cuculus canorus*) was reared in the nest of a Dunnock (*Prunella modularis*) in the hedge of my garden on the outskirts of Knutsford, Cheshire. On 17th May 1955 I saw a Cuckoo perched on top of this hedge, examining the growth below and making tentative efforts to enter the hedge which was extremely thick and close. After a few minutes, the bird gave up and flew away. Thinking that perhaps the interesting events of the previous year were to be repeated, I immediately went out and examined the hedge beneath the spot where the Cuckoo had been perched. I found the nest of a Dunnock containing three eggs. A little less than four hours later, at 2 p.m., on looking

again out of the window, I saw a Cuckoo, presumably the same bird, struggling out of the top of the hedge at the same spot and making gulping motions with the head and neck. As soon as it got clear, the bird flew off and, hoping to find that a Cuckoo's egg had been substituted for one of the Dunnock's, I at once went out and examined the nest. I was astonished to find it empty. The nest itself was undamaged, and from its position in the thick hedge I do not think that it could possibly have been raided by a ground animal. As the hedge is in full view of all the windows at the back of the house, and is on that side of the garden away from the drive to the front and back doors, I am quite certain that the eggs cannot have been removed by a human being. Consequently it seems that the Cuckoo must have taken all the eggs.

RUTH C. H. WRIGHT

[Mrs. Wright's account provides further evidence that the Cuckoo occasionally destroys the eggs or young of possible fosterers.—EDS.]

Alpine Swift in Berkshire.—On 7th June 1955 at 1900 hours I identified an Alpine Swift (*Apus melba*) feeding over a small lake at Silwood Park, Ascot, Berkshire. Good views were obtained of the bird when it made three attempts to drink from the lake at a distance of thirty yards from me. It was much paler than a Swift (*Apus apus*), in fact in the strong sunlight quite brown; chin and belly were white with breast-band like a Sand Martin (*Riparia riparia*). The impression I had was that the bird was slower and more graceful than a Swift. After about 10 minutes, in which time I had many good views of it, the bird left in a westerly direction. This is the first record for Berkshire.

E. E. GREEN

The calls of Short-toed Larks at Fair Isle.—In mid-October 1954, two Short-toed Larks (*Calandrella brachydactyla*) were present in stubble-fields and adjoining root-crops at Fair Isle. The first was not identified until 9th October, although its call-note had been heard for some days previously; the second was first seen on 11th October; both were present on the 14th, but had apparently left with a large proportion of the Skylarks (*Alauda arvensis*) by the next day.

A full description of the birds has been given in *F.I.B.O. Bull.* (vol. 2, pp. 197-199), but as we formed the opinion that they were most probably of the Eastern race (*C. b. longipennis*), on the call-notes of which there seems to be no published information, it may be worth while summarizing our observations here.

The most distinctive and probably a diagnostic call was one which first attracted our attention to one of the birds, as it flew with Skylarks when we entered the field, and which resulted in our giving it the nickname "Tinkerbell". The first bird used this metallic, bell-like jingle a great deal, when flying and also some-

times when on the ground, but the second bird resorted to it much less often. We cannot find this note, which could be written as a musical "wink, wink" repeated, mentioned in *The Handbook* (vol. I, p. 171) for the Eastern or the typical race. There was also a "tewp, tewp" of uneven rhythm, used by both birds on rising; and sometimes they went off with a slurred rippling note not unlike the Skylark's alarm. The bird which spent much of its time alone in crops was especially prone to give this call when flushed. Another plaintive single note, not often heard, was we think the "tee-oo" call described in *The Handbook* for the typical form. Points in their behaviour which impressed us were their extremely rapid feeding-action (much more vigorous than the Skylark's) and a curious sideways hopping movement which sometimes alternated with the normal running gait.

We should now add that we ourselves have every confidence that the birds were of the Eastern race. In October 1952 an Eastern Short-toed Lark was collected at Fair Isle to establish identification (*antea*, vol. xvi, p. 210), and this skin is now kept in the laboratory and was available to take into the field (K.W. on 14th October) for comparison with the two birds. They were often watched at close quarters and in good light and were to all appearances identical in plumage with this specimen.

KENNETH WILLIAMSON and HARRY A. CRAW

Imitative behaviour of immature Blackbirds.—At 1 p.m. on 19th August 1955 two immature Blackbirds (*Turdus merula*) flew to a shallow bowl containing water on my lawn at Brentry near Bristol. One bird got in the water and prevented the other from entering the bowl.

The first bird started to bathe, splashing the water over the body with vigorous beats of the wings, the head being held low. These movements were imitated synchronously on two occasions by the second bird, standing on the lawn beside the bowl of water. The birds were then disturbed and flew off. A. P. RADFORD

Regular nocturnal song in Robin.—In December 1953 and early January 1954 I was at various times awakened by a Robin (*Erithacus rubecula*) singing during the night outside my home at Abercynon, Glamorgan. On almost every night during these two months the song was heard regularly at about 1 a.m., 2.30 a.m., 4 a.m. and 4.30 a.m. Each period of song lasted 15 to 20 minutes. It is, of course, possible that the bird sang at other times without my being disturbed by it. The song came from various parts of a hedge about 10 yards from my bedroom window. Near the hedge is a street lamp which was kept on throughout the hours of darkness. This street lamp, together with the extremely mild weather in the December and January of that winter, may have induced this particular bird to sing at night.

R. E. JONES

Robin taking dragonflies.—As *Odonata* are not given in the list of food of the Robin (*Erithacus rubecula*) in the *Handbook* (vol. v, p. 203), it may be of interest to record that on 29th June 1953, at Aldenham Reservoir, Hertfordshire, I saw an adult Robin engaged in catching a number of small damselflies of the species *Ischnura elegans*. I was able to trace this bird to a nest and watch it feeding the young with these insects. The wings as well as the bodies of the insects were eaten.

BRYAN L. SAGE

Ashy-headed Wagtail in Norfolk.—On 16th May, 1955, during a period of moderate south-westerly winds, a *flava* wagtail with all the characteristics of a male Ashy-headed Wagtail (*Motacilla flava cinereocapilla*) appeared with two rather tawny-looking females on the coastal fresh-marshes at Cley, Norfolk.

We are both familiar with the summer male Grey-headed Wagtail (*M. f. thunbergi*) from which the bird in question differed as follows:—The forehead, crown, nape and ear-coverts were a beautiful bright grey-blue, nearer that of *M. f. flava* and paler than that of *thunbergi*, whose very dark ear-coverts contrast markedly with the crown colour. The throat and malar region were white and there was not the slightest trace of a superciliary stripe. The bird called frequently, but the notes did not differ from those of *flavissima*.

R. A. RICHARDSON and P. R. CLARKE

Notes on the behaviour of Juvenile House Sparrows.—In the spring of 1955, at Sevenoaks Weald, Kent, several broods of House Sparrows (*Passer domesticus*) were reared in blackthorn bushes near a chicken house which formed a convenient hide. The young left the nests between the 22nd and 27th May and the following notes on their behaviour were made in the next fortnight.

Low intensity reproductive behaviour similar to that recorded by D. Goodwin for Mistle Thrushes (*Turdus viscivorus*) (*antea*, vol. xlvii, pp. 81-83) was noticed on several occasions. One juvenile, distinguishable by a bare patch on its head, was particularly addicted to "toying" with nest material. While awaiting its turn for feeding it often picked up or broke off pieces of dead grass and made rather indeterminate nest-building movements, pushing the material down beside it, picking it up again and then dropping it and apparently losing interest. On the following day (30th May) this bird carried two pieces of dead grass into the bushes. The first piece was taken straight there and placed in position among dead twigs; the second piece, taken there a few minutes later, was dropped without any effort being made to fix it in position near the first. The juvenile then began food-begging and was not seen to pick up more grass that day. On subsequent days it frequently picked up grass and toyed with it, as did two other juveniles, but no more material was seen being carried into

the bushes until 8th June. By this date the young birds were feeding themselves and one abruptly interrupted its feeding to break off a dead grass stem and fly up into the blackthorns with it. Upon alighting it dropped the grass and flew off, and no further behaviour of this type was seen.

When the juveniles began to feed themselves they would occasionally pick up and attempt to eat such things as moss and feathers, but these actions did not resemble the potential nest-building movements and I think could not be confused with the latter. Moreover, nest-building movements were most often seen with birds which were still being regularly fed by the parents.

One of the adults (♀) was observed going to feed two juveniles perched near each other on a twig. Both begged, with open beaks and rapidly vibrated wings, but she turned her back on one and fed the other, whereupon the first youngster began to peck at her cloaca. The hen dropped the food she was carrying and turned and gripped the juvenile firmly by the head-feathers for a short time. The cloaca-pecking and the hen's reply to it were so reminiscent of the actions of cock and hen during the communal display (see D. Summers-Smith, *Ibis*, vol 96, p. 116) that it seems to me they must be regarded in the same light as the nest-building movements, i.e. as an incomplete "copy" of the reproductive behaviour of the adults.

F. L. HUDSON

[We showed Mr. Hudson's note to D. Summers-Smith who has been working on the House Sparrow for some years. He commented as follows: "The account of nest-building activities by young birds is interesting though probably, as Goodwin (*loc. cit.*) suggests, much commoner than is thought. At roosting-time young House Sparrows, still being fed by their parents, frequently carry grass into the roost. I have noticed "toying" behaviour in my hand-reared aviary birds within a day or two of fledging. Five weeks after fledging these birds were carrying grass into nest-boxes, though there was no real attempt at nest-building.

"I think it is dangerous to conclude from one observation that juveniles will indulge in cloaca-pecking. The sparrows in my aviary, however, attempted coition two weeks after fledging and precocious behaviour by young animals is widespread."—EDS.]

1955

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2. Notes should be worded as concisely as possible, and drawn up in the form in which they will be printed, with signature in block capitals and the writer's address clearly written on the same sheet. If more than one Note is submitted, each should be on a separate sheet, with signature and address repeated. In the case of rarity records, any supporting description which is too detailed for publication should be attached separately.

3. Certain conventions of style and lay-out are essential to preserve the uniformity of any publication. Authors of Papers in particular, especially of those containing Systematic Lists, Reference Lists, Tables, etc. should consult the ones in this issue as a guide to general presentation. English names of species should have capital initials for each word, except after a hyphen (e.g. Siberian Thrush, Yellow-headed Wagtail), but group terms should not (e.g. thrushes, wagtails). English names are those used in *The Handbook of British Birds*, with the exception of the changes listed in *British Birds* in 1953 (vol. xlv, pp. 1-3). The scientific name of each species should be given (in brackets and underlined) immediately after the first mention of the English name. Sub-specific names should not be used except where they are relevant to the discussion. It is sometimes more convenient to list scientific names in an appendix. Dates should take the form "1st January 1955" and no other, except in Tables where they may be abbreviated to "1st Jan.", "Jan. 1st", or even "Jan. 1", whichever most suits the lay-out of the Table concerned. It is particularly requested that authors should pay attention to Reference Lists, which otherwise cause much unnecessary work. These should take the following form:

BUCKER, B. W. (1949): "Species and subspecies: a review for general ornithologists." *Brit. Birds*, xlii: 129-134.

ATHERBY, H. F. (1894): *Forest Birds: Their Haunts and Habits*. London. p. 34.

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BRITISH BIRDS



NOVEMBER 1955

THREE SHILLINGS

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Cover photograph by G. K. Yeates: Greenshank (*Tringa nebularia*).



VOL. XLVIII

No. II

NOVEMBER

1955



BRITISH BIRDS

REPORT ON BIRD-RINGING FOR 1954*

By ROBERT SPENCER, B.A.,

Secretary, Bird-Ringing Committee of the British Trust for Ornithology

THIS is the eighteenth report issued on behalf of the Committee, continuing the earlier sequence under the title "The *British Birds* Marking Scheme". It combines a report on the progress of ringing between October 1953 and December 1954 with a selected list of recoveries reported up to 31st December 1954.

MANAGEMENT

The members of the Committee are as follows: Sir Landsborough Thomson (*Chairman*), Miss E. P. Leach, A. W. Boyd, Hugh Boyd, J. A. Gibb, P. A. D. Hollom, G. R. Mountfort, Major-General C. B. Wainwright, George Waterston; Sir Norman Kinnear; Bruce Campbell and C. A. Norris (*ex officio*); Robert Spence (Secretary). The only new member of the Committee is Sir Norman Kinnear, who succeeded Lord Ilehester as representative of the Trustees of the British Museum. A Sub-committee comprising Hugh Boyd, C. A. Norris, Major-General C. B. Wainwright and the Secretary was formed to plan the development and production of new rings.

By permission of the Trustees, the headquarters of the scheme remain at the British Museum (Natural History). During the latter part of 1954 the approval of the G.P.O. and the Museum

* A publication of the British Trust for Ornithology.

† The last preceding report was published in *British Birds*, vol. xlvii, pp. 361-392.

authorities was obtained for the use of the shorter address: "BRIT. MUSEUM LONDON S.W.7." to be introduced on rings issued in 1955. Rings inscribed "BRITISH MUSEUM NAT. HIST. LONDON" will remain in circulation for some time.

Miss E. P. Leach continued to handle the reports of birds ringed abroad and recovered in Britain. Her advice and ready help on many occasions is gratefully acknowledged.

FINANCE

The salaries of the Secretary and his assistant were met by grants from the Nature Conservancy. Despite a sharp rise in the wholesale prices of rings the cost to ringers remained unaltered, and the Trust made an increased grant of £150 from its main fund towards running expenses. The full accounts for 1954 appear in the Annual Report of the Trust.

PROGRESS OF RINGING

The steady increase in the numbers of birds ringed was continued in 1954 when the annual total exceeded 100,000 for the first time (see Table 1). Despite a rather poor breeding-season the number of nestlings ringed, 36,621, was the second-highest annual total. At 66,237 the total of birds trapped was an increase of less than three thousand on the 1953 figures, the smallest annual rise since the war. Many more Blackbirds were trapped than usual, partly as a result of the prolonged season and of the marked immigration of this species in early November when east coast observatories were catching large numbers. Waders and warblers were trapped and ringed in greater abundance and variety than ever before, and the total of sixteen Barred Warblers vies for comment with twenty-one Jack Snipe and seven Little Stints. In all, birds of 209 species and sub-species were ringed during the year, the following nine being new to the ringing list: Red-necked Grebe and Temminck's Stint (Monks' House B.O.); Siberian Thrush, *Turdus sibiricus* (Isle of May B.O.); Pied Wheatear (John Ash); Aquatic Warbler (Cley B.O.); Arctic Warbler, of the race *Phylloscopus b. borealis* (Fair Isle B.O.); Yellowthroat, *Geothlypis trichas* (Lundy B.O.); Yellow-headed Wagtail, *Motacilla citreola* (Fair Isle B.O.); and Pine Grosbeak (Isle of May B.O.). The Siberian Thrush, Yellowthroat and Yellow-headed Wagtail were new birds to Britain.

Twenty-four individual totals exceeded 1,000, the eleven bird observatories accounting for over a quarter of the birds ringed during the year.

RECOVERIES

An extra column has been added to Table II showing the numbers of recoveries reported during 1954. There are so many that it is impossible to publish more than a small proportion of

them, and it has been found necessary this year to extend the system of summarization. As an additional help maps have been introduced to show the recovery localities of certain species.

Each year produces its quota of unusually interesting recoveries, and in a number of cases comment on a particular bird has been inserted in the recovery list. The restrictions of space must limit such comment, but attention may also be drawn to the Red-backed Shrike in Sicily, two recoveries in France of winter-trapped Great Tits, long north-westerly movements of Redstart and Spotted Flycatcher on spring passage, a Swallow (ringed at Oundle) in Germany, Sedge Warbler and Willow Warbler ringed at the Isle of May on spring passage and recovered shortly afterwards in Westmorland and Derbyshire respectively, and a Blackbird ringed at Spurn 6th November reported four days later in Germany.

PUBLICATIONS

The following report includes particulars of ringing and recoveries of geese and ducks under this scheme:—

P. Scott and H. Boyd (1954): *Sixth Annual Report of the Wildfowl Trust, 1952-53.*

The following paper is also relevant:—

R. H. Poulding (1954): "The loss of rings by marked Herring Gulls." *Bird Study*, vol. 1, pp. 37-39.

Table I

NUMBER OF BIRDS RINGED

	Trapped	Pull.†	Total
1st October to 31st December 1954*	11,572	63	11,635
1954 (1.10.53-30.9.54)	66,237	36,621	102,858
1953	63,318	35,199	98,517
1952	56,867	39,459	96,326
1951	49,364	36,379	85,743
1950	42,112	33,994	76,106
1949	27,496	29,965	57,461
1948	18,413	20,911	39,324
1947	14,574	14,007	28,581
1946	8,909	8,412	17,321
Grand Total (including arrears)	1,354,835		

* The ringing year formerly commenced on 1st October and ended on 30th September. In 1954 it was decided to make it coincide with the calendar year in future, and an additional collection of schedules was made at the end of the year.

† An explanation of the term "pull." or "pullus" appears on page 468.

Table II

NUMBERS OF EACH SPECIES RINGED—1954 RECOVERY TOTALS

	Ringed			Grand Total	Total Rec'd. in 1954
	1.10.53-31.12.54	Trapped	Pull.		
Storm Petrel	...	198	25	223	1,946
Manx Shearwater	...	3,917	872	4,789	53,994
Fulmar	...	61	588	649	2,346
Gannet	...	31	935	966	14,855
Cormorant	...	2	162	164	3,786
Shag	...	70	376	446	3,865
Heron	...	0	123	123	3,095
Mallard	...	1,603	76	1,679	13,724
Teal	...	1,872	0	1,872	15,531
Wigeon	...	299	0	299	1,352
Tufted Duck	...	57	0	57	549
Eider	...	22	3	25	932
Pink-footed Goose	...	1,355	0	1,355	3,516
Buzzard	...	2	54	56	780
Sparrowhawk	...	20	30	50	1,212
Hen Harrier	...	1	37	38	211
Merlin	...	20	14	34	499
Kestrel	...	43	75	118	1,799
Moorhen	...	236	23	259	3,299
Coot	...	211	0	211	911
Oystercatcher	...	42	251	293	4,283
Lapwing	...	197	2,401	2,598	57,035
Ringed Plover	...	65	141	206	2,967
Turnstone	...	77	0	77	126
Snipe	...	71	60	131	2,452
Curlew	...	18	292	310	5,260
Common Sandpiper	...	127	77	204	2,395
Redshank	...	84	191	275	3,920
Dunlin	...	87	3	90	419
Stone Curlew	...	2	1	3	337
Arctic Skua	...	50	61	111	377
Great Skua	...	2	130	132	1,075
Great Black-backed Gull	...	24	54	78	1,264
Lesser Black-backed Gull	...	81	522	603	17,038
Herring Gull	...	331	1,059	1,390	18,853
Common Gull	...	45	62	107	3,752
Black-headed Gull	...	147	3,030	3,177	31,845
Kittiwake	...	178	592	770	6,258
Common Tern	...	9	257	266	24,580
Arctic Tern	...	35	637	672	8,658
Roseate Tern	...	0	256	256	2,129
Little Tern	...	14	97	111	1,467
Sandwich Tern	...	0	620	620	25,300
Razorbill	...	86	220	306	8,260
Guillemot	...	38	146	184	5,286
Black Guillemot	...	2	11	13	310
Puffin	...	485	246	731	9,163
Stock Dove	...	22	75	97	1,587
Woodpigeon	...	17	130	147	5,689
Turtle Dove	...	80	24	113	1,050
Cuckoo	...	37	47	84	1,449
Barn Owl	...	5	36	41	1,066

				Ringed			Total	
				1.10.53-31.12.54	Grand	Grand	Rec'd.	
				Trapped	Pull.	Total	Total	in 1954
Little Owl	...	...	...	17	62	79	1,288	6
Tawny Owl	...	...	...	15	109	124	2,049	10
Long-eared Owl	...	...	...	5	20	25	404	2
Short-eared Owl	...	...	...	0	29	29	293	2
Swift	...	...	...	428	153	581	2,888	4
Green Woodpecker	...	...	...	27	15	42	299	3
Great Spotted Woodpecker	...	...	...	33	6	39	409	2
Wryneck	...	...	...	13	12	25	432	1
Woodlark	...	...	...	1	25	26	277	—
Skylark	...	...	...	343	223	566	6,227	1
Swallow	...	...	...	301	2,459	2,760	64,908	21
House Martin	...	...	...	302	61	363	6,035	3
Sand Martin	...	...	...	448	8	456	7,010	—
Raven	...	...	...	0	24	24	594	5
Carriion Crow	...	...	...	12	94	106	2,821	11
Rook	...	...	...	135	346	481	7,044	23
Jackdaw	...	...	...	186	327	513	7,195	37
Magpie	...	...	...	47	55	102	2,403	2
Jay	...	...	...	54	57	111	1,235	5
Chough	...	...	...	2	18	20	153	—
Great Tit	...	...	...	2,306	1,069	3,375	25,128	32
Blue Tit	...	...	...	5,415	1,258	6,673	47,899	77
Coal Tit	...	...	...	129	280	409	3,070	1
Marsh Tit	...	...	...	89	64	153	968	1
Long-tailed Tit	...	...	...	29	0	29	348	—
Nuthatch	...	...	...	93	38	131	1,371	1
Treecreeper	...	...	...	22	51	73	1,011	—
Wren	...	...	...	698	26	724	6,709	1
Dipper	...	...	...	22	205	227	2,963	1
Mistle Thrush	...	...	...	147	212	359	7,354	11
Fieldfare	...	...	...	84	0	84	392	1
Song Thrush	...	...	...	1,787	1,738	3,525	90,259	110
Redwing	...	...	...	320	0	320	2,376	4
Ring Ouzel	...	...	...	41	61	102	1,068	4
Blackbird	...	...	...	6,497	2,621	9,118	106,033	293
Wheatear	...	...	...	607	301	908	7,018	1
Stonechat	...	...	...	44	42	86	1,589	—
Whinchat	...	...	...	271	99	370	3,288	1
Redstart	...	...	...	267	391	658	6,211	1
Black Redstart	...	...	...	22	15	37	283	—
Nightingale	...	...	...	34	80	114	3,022	—
Robin	...	...	...	2,715	817	3,532	47,716	67
Grasshopper Warbler	...	...	...	27	5	32	261	—
Reed Warbler	...	...	...	47	100	147	2,012	—
Sedge Warbler	...	...	...	417	88	505	4,087	2
Blackcap	...	...	...	111	41	152	2,049	—
Garden Warbler	...	...	...	220	30	250	2,344	1
Whitethroat	...	...	...	2,404	508	2,912	16,856	6
Lesser Whitethroat	...	...	...	154	17	171	1,243	—
Willow Warbler	...	...	...	2,085	1,139	3,224	27,797	10
Chiffchaff	...	...	...	532	32	564	3,565	—
Wood Warbler	...	...	...	17	31	48	1,803	—
Goldcrest	...	...	...	107	0	107	1,386	—
Spotted Flycatcher	...	...	...	184	370	554	7,455	1
Pied Flycatcher	...	...	...	286	702	988	7,729	4
Dunnoek	...	...	...	1,974	466	2,440	27,955	19
Meadow Pipit	...	...	...	782	301	1,083	11,810	7

				Ringed			Total	
				1.10.53-31.12.54	Grand	Total	Rec'd.	
				Trapped	Pull.	Total	Total	in 1954
Tree Pipit	...	...	...	10	61	71	2,833	—
Rock Pipit	...	...	...	520	60	580	3,152	—
Pied Wagtail	...	...	...	419	266	685	11,515	15
Grey Wagtail	...	...	...	12	76	88	1,682	1
Yellow Wagtail	...	...	...	467	82	549	3,558	3
Red-backed Shrike	...	...	...	20	82	102	1,414	1
Starling	...	...	...	15,400	949	16,349	141,888	549
Greenfinch	...	...	...	3,275	373	3,648	49,071	55
Goldfinch	...	...	...	93	55	148	1,380	1
Linnet	...	...	...	1,081	748	1,829	19,254	7
Twite	...	...	...	133	29	162	1,168	—
Lesser Redpoll	...	...	...	3	14	17	781	—
Bullfinch	...	...	...	71	71	142	2,633	—
Chaffinch	...	...	...	2,672	470	3,142	54,482	37
Brambling	...	...	...	477	0	477	2,425	2
Yellowhammer	...	...	...	301	217	518	9,675	7
Corn Bunting	...	...	...	29	16	45	290	1
Reed Bunting	...	...	...	384	161	545	5,013	4
House Sparrow	...	...	...	5,806	149	5,955	29,007	63
Tree Sparrow	...	...	...	278	230	508	4,045	—

NUMBERS RINGED AND RECOVERED IN 1954 OF SPECIES NOT SHOWN IN
TABLE

(1954 total, grand total, and 1954 recoveries are given in that order.)

Great Crested Grebe 1/20/0; Red-necked Grebe 1/1/0; Little Grebe 11/83/0; Leach's Petrel 9/233/0; Bittern 2/45/0; Garganey 4/66/3; Gadwall 18/76/0; Pintail 34/347/12; Shoveler 61/267/15; Scaup 1/3/0; Pochard 9/97/1; Goldeneye 1/5/0; Common Scoter 1/8/0; Shelduck 11/541/0; Grey Lag Goose 0/140/32; White-fronted Goose 0/253/7; Barnacle Goose 1/3/1; Canada Goose 84/237/8; Whooper Swan 1/2/0; Golden Eagle 1/19/0; Marsh Harrier 7/72/1; Montagu's Harrier 11/178/0; Hobby 1/48/0; Peregrine 3/148/1; Red-legged Partridge 1/13/0; Water Rail 28/147/1; Corncrake 9/681/0; Little Ringed Plover 10/85/0; Kentish Plover 2/3/0; Golden Plover 16/450/1; Dotterel 2/15/0; Jack Snipe 21/31/1; Woodcock 33/5561/1; Whimbrel 6/79/0; Bar-tailed Godwit 4/9/0; Green Sandpiper 2/35/0; Wood Sandpiper 1/19/0; Spotted Redshank 2/3/0; Knot 5/17/0; Purple Sandpiper 5/10/0; Little Stint 7/17/0; Curlew Sandpiper 10/16/0; Sanderling 2/25/0; Ruff 4/18/0; Little Auk 1/8/1; Rock Dove 4/68/0; Nightjar 11/337/1; Kingfisher 4/837/0; Lesser Spotted Woodpecker 6/54/0; Hooded Crow 14/198/0; Crested Tit 14/31/0; Willow Tit 29/114/0; Bearded Tit 1/48/0; Siberian Thrush 1/1/0; Pied Wheatear 1/1/0; Bluethroat 5/39/0; Marsh Warbler 2/42/0; Melodious Warbler 2/4/0; Icterine Warbler 5/29/0; Barred Warbler 16/46/0; Subalpine Warbler 1/4/0; Arctic Warbler 1/1/0; Yellow-browed Warbler 1/25/0; Yellowthroat 1/1/0; Firecrest 1/17/0; Red-breasted Flycatcher 2/32/0; White Wagtail 41/67/1; Yellow-headed Wagtail 2/2/0; Waxwing 1/7/0; Great Grey Shrike 1/20/0; Woodchat Shrike 1/7/0; Hawfinch 3/150/0; Siskin 3/77/0; Mealy Redpoll 3/18/0; Greenland Redpoll 4/6/0; Pine Grosbeak 1/1/0; Cirl Bunting 1/129/0; Lapland Bunting 3/16/0; Snow Bunting 15/296/0.

KEY TO RINGERS' INITIALS

DGA	D. G. Andrew	MHBO	Monks' House Bird Ob- servatory
DRA	D. R. Anderson	SBO	Skokholm Bird Observa- tory
HEA	H. E. Axell	AEP	A. E. Platt
JWA	J. W. Allen	EGP	E. G. Philp
RWA	R. W. Arthur	IDP	I. D. Pennie
SMDA	S. M. D. Alexander	IVBP	I. V. Balfour-Paul
AWB	A. W. Boyd	RP	R. Perry
GAB	G. A. Bowden	RHP	R. H. Poulding
HGB	H. G. Brownlow	GAR	G. A. Raeburn
JAB	J. A. Benington	HWR	H. W. Robinson
JJB	J. J. Boon	JR	J. Reynolds
RHB	R. H. Brown	PAR	P. A. Rayfield
RMB	R. M. Band	PSR	P. S. Redman
RSB	R. S. Broke	RR	R. Redfern
SSPB	Scottish Soc. for Protec- tion of Wild Birds	RWR	R. W. Robson
TB	T. Bagenal	AHS	A. H. Smith
AC	A. Cross	BS	Bootham School
CBC	Cambridge Bird Club	CS	Clayesmore School
DBC	Dingle Bird Club	DS	Lord David Stuart
DMC	D. M. Cormack	HNS	H. N. Southern
EC	E. Cohen	HSS	Halifax Scientific Society
CGC	C. G. Cartwright	JS	J. Stafford
MOC	Midlothian Orn. Club	JFS	J. F. Simms
PJC	P. J. Chadwick	KGS	K. G. Spencer
RPC	R. P. Cockbain	LNHS	London Nat. Hist. Society
AD	A. Darlington	OS	Oundle School
ED	E. Duffey	OOS	Oxford Orn. Society
RFD	R. F. Dickens	RS	R. Spencer
WJE	W. J. Eggeling	SS	Sedburgh School
JF	J. Field	US	Uppingham School
JKF	J. K. Fenton	WNS	Wharfedale Naturalists' Society
JMF	J. Fisher	WT	Wildfowl Trust
FG	F. Gribble	PVU	Mrs. P. V. Upton
FGG	F. G. Grey	HV	H. Van den Bos
JG	J. Grierson	ACW	A. C. Whiteside
AGH	A. G. Hurrell	CBW	C. B. Wainwright
EGH	E. G. Holt	LGW	L. G. Weller
GHH	G. H. Hughes-Onslow	A&R	Ash & Ridley
HGH	H. G. Hurrell	B&T	Bilby & Taylor
LH	Lynford Hall Bird Club	C&C	Campbell & Campbell
PADH	P. A. D. Hollom	CCM&P	Cowin, Crellin, Moss & Pool
TEH	Mrs. T. E. Hodgkin	D&I	Davis & Iles
WH	W. Howe	HM&M	Hamilton, MacGregor & Mills
WDH	W. D. Holmes	K&M	Kent & Mills
EGI	Edward Grey Institute	L&R	Leics. & Rutland Orn. Society
AHJ	A. H. Johnson	ND&N	Northumberland, Durham & Newcastle N.H.S.
RDJ	R. D. Jackson	S&W	Smith & Walker
JWL	J. W. Lund	TH&G	Thearle, Hobbs & Goring
RML	R. M. Lockley	W&M	Watts & McConville
AEM	A. E. Male		
ATM	A. T. MacMillan		
JM	J. MacGeoch		
KSM	K. S. MacGregor		
HCWN	H. C. W. Nicholls		
JAN	J. A. Nelder		
CBO	Cley Bird Observatory		

NOTE: Initials are omitted where the ringing was carried out at a bird observatory.

Selected List of Recoveries Reported During 1954

Key to Symbols and Terms

Ring Number: Where this is in italics the ring has been returned.

O: Indicates bird breeding, or bred, at place of ringing.

Age: pull. (pullus)—nestling or chick, not yet flying;

juv.—young, able to fly freely;

1stW.—first winter;

f.g.—full-grown, age uncertain;

ad.—adult.

Sex: M—male; F—female.

v: Caught or trapped and released with ring.

+: Shot or killed by man.

x: Found dead or dying.

(): Caught or trapped alive and not released, or released but with ring removed.

[?]: Manner of recovery unknown.

Date of Recovery: Where this is unknown the date of the report is given in brackets.

NOTE: The format of the report, and the symbols and terms employed are those put forward for international adoption at the XIth International Ornithological Congress. In the list the Ringing details are given on the first or first and second lines and the Recovery data on a new line below.

Manx Shearwater (*Procellaria puffinus*)

Twenty-four off-shore recoveries from between Finistère and Santander (extreme dates 2.4.54 and 20.8.54) conform to the pattern of movements analysed by Lockley in the Supplement to *British Birds*, vol. xlvii "On the movements of the Manx Shearwater". The oldest birds had been ringed in 1946 (1) and 1947 (2).

AT 9491	O	pull.	12.9.46	Skomer: 51°44'N. 5°19'W. (Pemb. SBO.
	v		22.5.54	Copeland Island (Co. Down) 200 m. N.
AT 11692	O	pull.	26.8.52	Skokholm: 51°42'N. 5°16'W. (Pemb.
	[?]		(30.6.54)	Bonavista Bay: (48°55'N. 53°10'W.
				Newfoundland.
AT 25133	O	pull.	9.9.54	Skokholm.
	[?]		(13.9.54)	Llandrindod Wells (Radnorshire) 85 m. E.N.E.
AT 25236	O	pull.	16.9.54	Skokholm.
	x		(22.9.54)	Aylesbury (Bucks.) 190 m. E.
AT 25313	O	pull.	23.9.54	Skokholm.
	x		(29.9.54)	Nr. Merthyr Tydfil (Glam.) ca. 80 m. E.
AT 25895	O	pull.	4.9.54	Copeland I.: 54°40'N. 5°32'W. (Co. Down).
	x		11.9.54	Mochras (Merioneth) 140 m. S.S.E.

Fulmar (*Fulmarus glacialis*)

AT 13595	O	pull.	26.8.54	Sula Sgeir: ca. 59°6'N. 6°10'W. (Outer Hebrides). JMF.
	()		9.9.54	Vaag Fjord: ca. 61°30'N. 6°45' W (Suderoy) Faeroes.
AT 27262	O	pull.	21.8.54	Sula Sgeir. JM.
	v		5.9.54	Westray (Orkney). 110 m. E.
AT 27310	O	pull.	21.8.54	Sula Sgeir. JM.
	x		ca. 27.9.54	Nr. Stromness (Orkney) 100 m. W.
AT 27321	O	pull.	22.8.54	Sula Sgeir. JM.
	x		2.10.54	Woolacombe (Devon) 550 m. S.
AT 27515	O	pull.	24.8.54	Sula Sgeir. JM.
	x		8.9.54	Oravik (Suderoy) Faeroes.

325342	O	pull.	31.7.52	St. Kilda: 57°49'N. 8°34'W. (Outer Hebrides). TB.
()			22.10.54	West Greenland. ca. 64°10'N. 52°10'W.
371547	O	pull.	9.8.53	Eynhallow: 59°08'N. 3°10'W. (Orkney). ED.
()			10.10.54	<i>At sea, off Faeroes.</i> ca. 65°50'N. 6°30'W.
309545	/ ? /	ad.	21.6.52	Isle of May: 56°11'N. 2°33'W.
			2.11.54	<i>Off Skagen</i> (57°45'N. 10°37'E.) Denmark.

Gannet (*Sula bassana*)

512343	O	pull.	25.8.54	Sula Sgeir: ca. 59°6'N. 6°10'W. (Outer Hebrides). JM.
()			(26.10.54)	<i>Off Cabo Mayor:</i> ca. 43°31'N. 3°48'W. (Santander) Spain.
12379	O	pull	25.8.54	Sula Sgeir. JM.
()			12.11.54	Punta Cires: 35°55'N. 5°30'W. Spanish Morocco.
12414	O	pull.	27.8.54	Sula Sgeir. JM.
()			31.10.54	<i>Off Finistère:</i> 47°50'N. 5°35'W. France.
12450	O	pull.	30.8.54	Sula Sgeir. JM.
()			1.11.54	<i>Nr. Lueca:</i> 43°23'N. 6°31'W. (Asturias) Spain.
12469	O	pull.	30.8.54	Sula Sgeir. JM.
v			13.10.54	Santander: 43°29'N. 3°48'W. Spain.
12479	O	pull.	30.8.54	Sula Sgeir. JM.
()			4.12.54	<i>Off Canary Islands:</i> ca. 29°N. 18°W.
12486	O	pull.	31.8.54	Sula Sgeir. JM.
()			19.10.54	<i>Off C. San Lorenzo:</i> 43°33'N. 5°40'W. (Asturias) Spain.
12490	O	pull.	31.8.54	Sula Sgeir. JM.
x			29.10.54	<i>Nr. Kilkee</i> (Co. Clare) 460 m. S.W.
7318	O	pull.	4.7.50	Bass Rock: 56°4'N. 2°38'W. (E. Lothian). MOC.
+			0.6.54	Sovetsk region: 55°5'N. 21°52'E. Lithuania.
9514	O	pull.	10.6.52	Bass Rock. IVBP.
()			20.10.54	<i>Off C. Finistère:</i> ca. 43°0'N. 9°18'W. Spain.
0646	O	pull.	5.7.53	Bass Rock. IVBP.
()			20.10.54	Casablanca: 33°39'N. 7°35'W. Morocco.
0656	O	pull.	5.7.53	Bass Rock. IVBP.
x			(9.8.54)	<i>Off Port Etienne:</i> ca. 20°9'N. 15°25'W. Mauretania. This bird was swallowed by a Weak Fish (<i>Sciaena sp.</i>) which was itself asphyxiated in the process.
2143	O	pull.	1.8.54	Ailsa Craig: 55°13'N. 5°7'W. (Ayrshire). PJC.
v			8.10.54	Peniche: 39°23'N. 9°22'W. (Estramadura), Portugal.
2289	O	pull.	1.8.54	Ailsa Craig. DMC.
()			(23.11.54)	Ceuta Bay: 35°55'N. 5°18'W. Spanish Morocco.
5795		ad.	23.5.52	Grassholm: 51°44'N. 5°29'W. (Pemb.) SBO.
x			31.1.54	Mehdia: 38°6'N. 10°2'W. Morocco.

506012		ad.	23.5.52	Grassholm. SBO.
	×		2.2.54	Oualidia: ca. 32°27'N. 9°0'W.

Morocco.

Other recoveries include one from the North Sea off Ijmuiden (Netherlands) and thirteen from Finistère-Biscay. As with the Fulmar, all recoveries of Sula Sgeir birds are listed since hitherto no ringing has taken place on the island. The recovery from the Sovetsk (formerly Tilsit) region is noteworthy as being in an area where the Gannet is only casual.

Cormorant (*Phalacrocorax carbo*)

126912	O	pull.	1.8.39	Big Scar: ca. 54°39'N. 4°43'W. (Wigtownshire). DS.
	×		8.7.54	Nr. Kirkcolum (Wigtownshire). 25 m. N.W.
124808	O	pull.	15.8.53	Farne Is.: 55°37'N. 1°37'W. (North's ND&N.
	+		9.10.54	Nr. Penkridge (Staffs.) 120 m. S.S.V.
124825	O	pull.	15.8.53	Farne Is. ND&N.
	+		1.1.54	Etang Lacanau: 44°59'N. 1°4'W. (Gironde) France.
509872	O	pull.	27.6.52	Aberffraw: 53°12'N. 4°28'W. (Anglesey). OOS.
	+		8.11.54	Portobello (E. Lothian) ca. 150 m. N.N.E.
507956	O	pull.	22.7.53	Puffin I.: 53°19'N. 4°1'W. (Anglesey) TH&G.
	×		27.1.54	Nr. Lowestoft (Suffolk) 250 m. E.S.E.
505284	O	pull.	9.7.53	Puffin I. W&M.
	+		4.1.54	Olhao: 37°0'N. 7°53'W. Nr. Faro Portugal.
510180	O	pull.	28.6.53	St. Margaret's I.: 51°38'N. 4°42'W. (Pemb.) RML.
	/?/		0.2.54	Nueil-sur-Layon: ca. 47°10'N. 0°2'W. (M. et-L.) France.
510236	O	pull.	28.6.53	St. Margaret's I. RML.
	×		9.1.54	Nr. Muros: 42°47'N. 9°2'W. (Coruna) Spain.

Seven birds from Anglesey and St. Margaret's I. were reported from the south coast as far east as Sussex during the winter months. Five birds ringed as pull. in 1953 and one in 1954, on St. Margaret's I., were recovered in France October-January: Calvados 1, Côtes-du-Nord 1, Finistère 2, Loir Inf. 2.

Shag (*Phalacrocorax aristotelis*)

511232	O	pull.	27.6.54	Bardsey I.: 52°46'N. 4°48'W. (Caerns.)
	×		(22.11.54)	Blagdon Lake (Somerset) ca. 135 m. S.E.
505807	O	pull.	17.7.48	Lundy: 51°12'N. 4°40'W. (Devon). RHP.
	×		17.9.54	Pwllheli (Caerns.) 120 m. N.
511881	O	pull.	7.7.54	Lundy.
	+		16.11.54	R. Vance: ca. 48°30'N. 2°0'W. (L.-et-V.) France.

Between 27th January and 4th February cold easterly winds of up to gale force were blowing over much of our eastern seaboard, and it seems probable that most of the following recoveries were associated with these weather conditions. It is interesting to note that all save one of the birds were in

their first winter, and that birds from only three ringing localities were concerned. Shags are seldom recovered inland or in south-eastern England. A small-scale repetition of this occurred after north-easterly gales in early December.

503491	O	pull.	27.6.53	Isle of May: 56°11'N. 2°33'W.
	+		30.1.54	Nr. Harrogate (Yorks.) 160 m. S.S.E.
510854	O	pull.	18.7.53	Bass Rock: 56°4'N. 2°38'W. (E. Lothian). MOC.
	×		early 2.54	St. Osyth (Essex). 330 m. S.S.E.
124713	O	pull.	25.6.53	Farne Is.: 55°37'N. 1°37'W. (North'd.) ND&N.
	×		4.2.54	Ambergate, Belper (Derbyshire) 180 m. S.
510728	O	pull.	10.7.53	Isle of May.
	×		6.2.54	High Wycombe (Bucks.) 320 m. S.S.E.
510765	O	pull.	16.7.53	Isle of May.
	/?/		8.2.54	Nr. Redcar (Yorks.) 120 m. S.E.
510714	O	pull.	10.7.53	Isle of May.
	×		10.2.54	Ipswich (Suffolk) 320 m. S.E.
510750	O	pull.	13.7.53	Isle of May.
	×		11.2.54	Cullercoats (Northumberland) 90 m. S.E.
124727	O	pull.	25.6.53	Farne Is. ND&N.
	×		12.2.54	Southwick (Sussex) 340 m. S.S.E.
124725	O	pull.	25.6.53	Farne Is. ND&N.
	×		12.2.54	Basildon (Essex) 290 m. S.S.E.
510702	O	pull.	10.7.53	Isle of May.
	×		15.2.54	Nr. Cullercoats (Northumberland) 90 m. S.E.
510734	O	pull.	10.7.53	Isle of May.
	+		16.2.54	Filey Brigg (Yorks.) 160 m. S.E.
124674	O	pull.	19.7.53	Farne Is.
	×		20.2.54	Blakeney Point (Norfolk) 190 m. S.E.
504711	O	pull.	30.7.52	Isle of May.
	×		21.2.54	Harwich (Essex) ca. 320 m. S.E.
503500	O	pull.	27.6.53	Isle of May.
	×		21.2.54	Christchurch, Wisbech (Cambs.) 265 m. S.S.E.
510732	O	pull.	10.7.53	Isle of May.
	×		(4.4.54)	Isle of Wight. 390 m. S.S.E. (Bird long dead).

Heron (*Ardea cinerea*)

511007	O	pull.	23.5.54	High Halstow: 51°22'N. 0°41'E. (Kent). EGL.
	×		(12.12.54)	Overton, Marlborough (Wilts.) ca. 100 m. W.
505175	O	pull.	28.5.53	High Halstow. EGL.
	+		24.1.54	St. Vigord: 49°30'N. 0°20'E. (S. Inf.)
				France.
507446	O	pull.	11.5.53	Wytham: 51°47'N. 1°19'W. (Berks.) EGL.
	×		11.11.53	La Proutière: 46°30'N. 0°10'W. (Deux Sevres) France.

Mallard (*Anas platyrhynchos*)

AE 1557	O	pull.	15.6.52	Gladhouse Res. 55°46'N. 3°8'W. (Midlothian) DGA.
	+		18.1.54	Ketel: 52°35'N. 5°50'E. (Overijssel) Holland.

935239	ad.F.	22.12.53	Abberton: 51°50'N. 0°53'E. (Essex). WT.
	+	21.8.54	Joroinen: 62°18'N. 27°50'E. L. Ruokojärvi, Finland.
935221	ad.M.	1.12.53	Abberton. WT.
	×	23.6.54	Kuivaniemi: 65°37'N. 25°55'E. Oijärvi, Finland.
932527	juv.M.	11.12.52	Abberton. WT.
	+	30.8.54	Haukipudas: ca. 65°12'N. 25°25'E. Oulu, Finland.
931987	juv.M.	12.9.52	Abberton. WT.
	+	20.8.54	Jurva: 62°40'N. 21°45'E. Närvijoki Finland.
933435	ad.	7.2.54	Abbotsbury: 50°40'N. 2°36'W. (Dorset). WT.
	+	20.8.54	Lapinlahti: 63°27'N. 27°25'E. Ollikkala, Finland.
932668	f.g.F.	3.1.53	Abberton. WT.
	+	23.8.54	Rengsjö: 61°30'N. 17°0'E. (Hälsingland), Sweden.
931648	f.g.F.	22.1.52	Abberton. WT.
	+	24.9.54	Nr. Svedala: 55°32'N. 13°15'E. Sweden.
933400	ad.	5.2.54	Abbotsbury. WT.
	+	11.11.54	Nr. Kristianopel: 56°15'N. 16°3'E. Sweden.
AF 5415	f.g.F.	27.2.54	Cley: 52°58'N. 1°3'E. (Norfolk).
	×	5.6.54	Nr. Kalmar: 56°40'N. 16°22'E. Sweden.
933276	ad.F.	18.2.54	Mileham: 52°44'N. 0°51'E. (Norfolk). WT.
	+	27.9.54	Malmö: 55°37'N. 13°1'E. Sweden.
935287	ad.M.	6.5.54	Abberton. WT.
	+	5.9.54	Ringkobing: 56°6'N. 8°18'E. (Jutland), Denmark.
931818	f.g.F.	20.8.52	Abberton. WT.
	+	13.9.54	Aubigny: 46°41'N. 3°10'E. (Allier), France.
932759	juv.F.	5.3.53	Abberton. WT.
	v	11.11.53	Warmond: 52°13'N. 4°33'E. (Z-Holland).
	+	14.2.54	Boves: 49°51'N. 2°23'E. Nr. Amiens. France.
928478	f.g.M.	13.9.50	Slimbridge: 51°47'N. 2°28'W. (Glos.). WT.
	+	15.7.54	R. Ize. Nr. Janzé: 47°58'N. 1°20'E. (I-et-V.) France.
970212	juv.F.	26.8.52	Slimbridge. WT.
	+	18.7.54	Nr. Lanvallon: 48°38'N. 2°59'W. (C-du-N.) France.
929387	ad.M.	21.4.52	Slimbridge. WT.
	+	4.9.54	Hontanx: ca. 43°48'N. 0°18'W. (Landes), France.
970060	f.g.F.	22.8.52	Slimbridge. WT.
	+	12.8.54	Nr. Inistioge (Co. Kilkenny) 200 m. W.N.W.

Overseas recoveries of Mallard, including the above, were distributed as follows:—Denmark 5, Finland 5, France 19, Germany 8, Holland 13, Sweden 5.

Teal (*Anas crecca*)

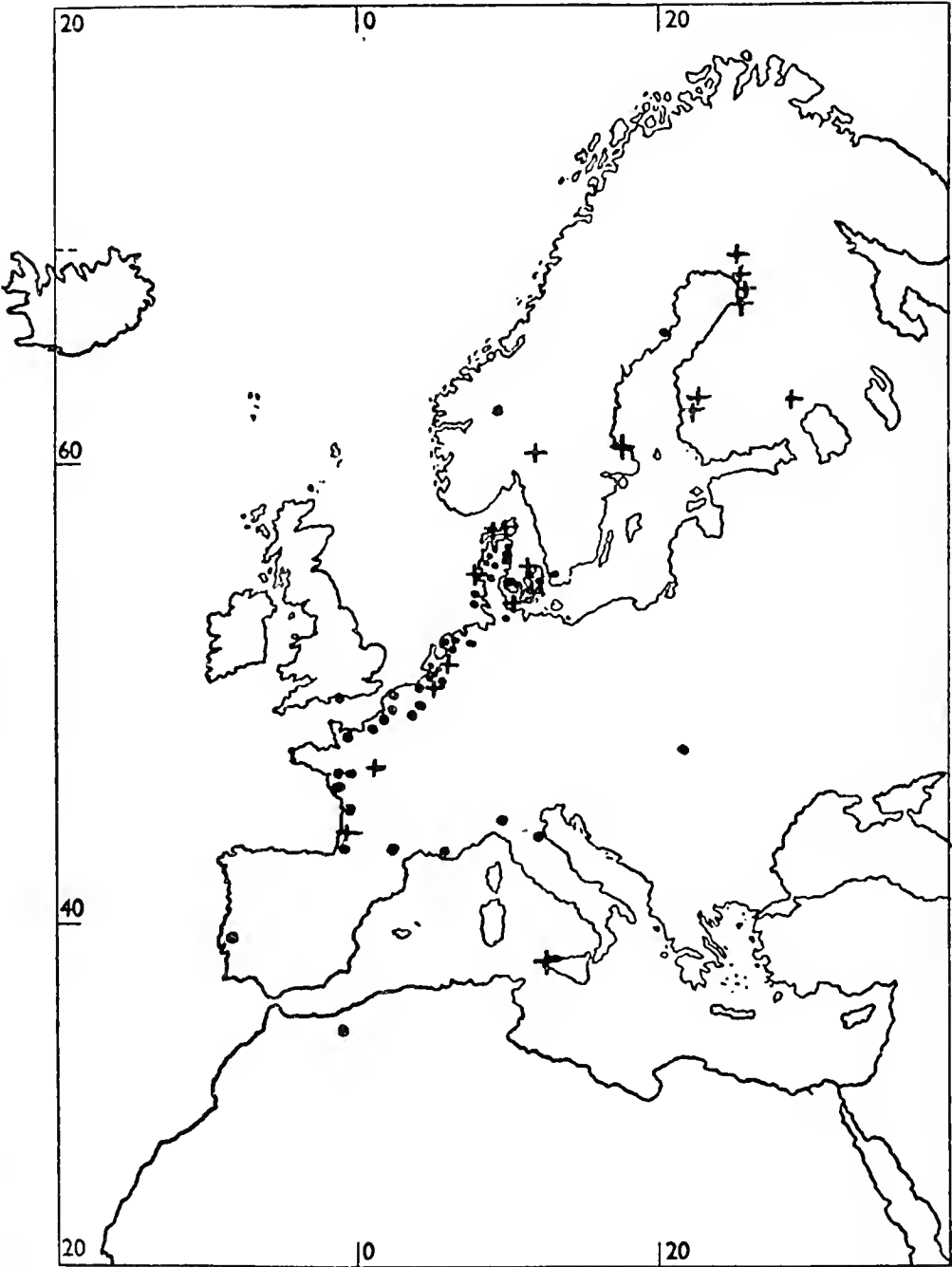
915128	f.g.M.	27.10.53	Abberton: 51°50'N. 0°53'E. (Essex). WT.
	×	1.6.54	Haapajarvi: 67°10'N. 25°20'E. Finland.
915589	f.g.M.	24.11.53	Abberton. WT.
	+	20.8.54	Liminka: ca. 64°50'N. 25°25'E. (Oulu), Finland.
910333	juv.M.	14.1.51	Abberton. WT.
	+	20.8.54	Karlö: 65°2'N. 24°50'E. Gulf of Bothnia, Finland.
915011	juv.M.	18.10.53	Abberton. WT.
	+	22.8.54	Ikaalinen: 61°46'N. 23°5'E. Varpeen- kylä, Finland.
906493	f.g.F.	28.12.48	Slimbridge: 51°47'N. 2°28'W. (Glos.). WT.
	+	0.9.53	R. Kuivajoki: ca. 65°40'N. 25°20'E. (Oulu), Finland.
915316	f.g.F.	5.12.53	Slimbridge. WT.
	×	19.5.54	Viinijärvi: 62°5'N. 29°0'E. Finland.
908845	f.g.F.	19.9.50	Borough Fen, Peakirk: 52°38'N. 0°17' W. (Northants.) WT.
	+	0.9.53	Kihniö: 62°9'N. 23°15'E. Hietalampi, Finland.
908804	f.g.M.	11.3.50	Borough Fen. WT.
	+	18.9.54	Saxtorp: 55°37'N. 13°1'E. Nr. Malmo, Sweden.
910538	f.g.M.	1.2.51	Abberton. WT.
	+	ca. 15.9.54	Bygdea: 64°3'N. 20°55'E. (Västerbot- ten) Sweden.
914143	ad.M.	16.10.52	Slimbridge. WT.
	+	11.8.54	Marma: 60°30'N. 17°28'E. (Uppland), Sweden.
915155	juv.M.	28.10.53	Abberton. WT.
	×	6.5.54	Nr. Dalby: 60°50'N. 12°55'E. Sweden.
906230	f.g.	17.9.53	Orielton: 51°40'N. 4°57'W. (Pembs.) WT.
	+	ca. 7.9.54	Tofte: 62°1'N. 9°16'E. Gudbrands- dalen, Norway.
916782	f.g.	2.2.54	Abbotsbury: 50°40'N. 2°36'W. (Dorset). WT.
	+	1.9.54	Nr. Tokaj: 48°8'N. 21°26'E. Szerencs, Hungary.
911290	f.g.F.	19.9.52	Abberton. WT.
	+	19.7.53	Chaumont-sur-Tharonne: 47°37'N. 1°53'E. (L.-et-Ch.), France.
914892	juv.F.	12.10.53	Abberton. WT.
	+	19.11.53	Avignonet: 43°20'N. 1°47'E. (Hte.- Gne.) France.
913805	f.g.M.	17.1.53	Abberton. WT.
	+	11.1.54	Nr. Pont St. Louis du Rhône: 43°23' N. 4°48'E. France.
912252	f.g.F.	5.12.51	Borough Fen. WT.
	/ ? /	0.2.52	Nr. Golega: 39°25'N. 8°33'W. Portugal.
915737	f.g.M.	10.12.53	Abberton. WT.
	+	11.4.54	Emilia: 44°24'N. 12°11'E. Ravenna, Italy.
911219	juv.F.	5.9.52	Abberton. WT.
	+	ca. 4.2.54	R. Po. Nr. Pavia: 45°11'N. 9°9'E. Italy.

915854

+

juv.F.
22.12.53
6.6.54

Abberton. WT.
Nr. Trapani: 38°1'N. 12°29'E.
Sicily.



MAP 1—DISTRIBUTION OF RINGED TEAL (*Anas crecca*) RECOVERED ABROAD IN 1954
Crosses indicate the positions of recoveries during the months of April-August; dots the remainder of the year. The cold weather movements listed below are omitted.

906802

/ ? /

f.g.M. 31.8.53
winter '53/'54

Slimbridge. WT.
El Kansera du Beth: 34°5'N. 0°55'W.
Morocco.

373442	O	pull.	19.7.53	Gladhouse Reservoir: 55°46'N. 3°8'W. (Midlothian). S&W.
	+		0.2.54	Ballinasloe (Co. Galway) 270 m. S.W.
15340		f.g.F.	15.1.54	Slimbridge. WT.
	×		11.5.54	Scalloway (Shetland) 580 m. N.

Other recoveries include nineteen from Denmark, four from N.W. Germany, and one from Belgium. Fifteen birds were recovered in Ireland.

COLD WEATHER MOVEMENT OF DUCKS, JANUARY/FEBRUARY 1954

The end of January 1954 was marked by the onset of a severe cold spell, which affected most of western Europe. Duck recoveries about this time were on a large scale, and the following figures suggest that there was an extensive cold-weather movement southwards. Many of the birds involved had been ringed in the autumn of 1953, some in January 1954. None of them was of proved British origin. Of 117 Teal recovered in France in 1954, 91 come within the period under review.

	No.	TEAL First Date	Last Date	No.	MALLARD First Date	Last Date
Rec'd.				Rec'd.		
CHANNEL ISLANDS						
Guernsey	4	29/1	11/2			
FRANCE						
Pas-de-Calais	1		14/2			
Nord				1		14/2
Somme	1		17/2	1		14/2
Ardennes	1		3/2			
Calvados	5	31/1	24/2			
Manche	4	30/1	2/2	1		3/2
Ille-et-Vilaine	4	2/2	6/2			
Côtes du Nord	6	0/1	10/2	1		4/2
Finistère	16	29/1	14/2	1		6/2
Morbihan	12	30/1	18/2			
Yonne	1		3/2			
Maine-et-Loire	1		13/2			
Loire Inferieure	8	31/1	9/3	2	5/2	7/2
Cher	1		10/2			
Vendée				1		3/2
Charente Maritime ...	3	1/2	2/2	3	25/1	8/2
Gironde	10	31/1	10/2			
Lot-et-Garonne	1		9/2			
Landes	10	31/1	7/2			
Vaucluse				1	24/1	
Basses Pyrenées	5	31/1	5/2	2	3/2	4/2
Ariège	1		7/2			
SPAIN						
Guipuzcoa 2)						
Viscaya 4).....	9	1/2	3/3			
Santander 3)						

Garganey (*Anas querquedula*)

11147	f.g.F.	14.3.52	Abberton: 51°50'N. 0°53'E. (Essex). WT.
	+	23.2.54	Nr. Almenara: 39°4'6N. 0°14'W. (Castellón). Spain.
44538	f.g.F.	26.8.53	Abberton. WT.
	+	27.3.54	Tolmezzo: 46°23'N. 13°2'E. (Udine), Italy.

Wigeon (*Anas penelope*)

11597	ad.	29.1.54	Abbotsbury: 50°40'N. 2°36'W. (Dorset). WT.
	+	17.9.54	Nyköping: 58°45'N. 17°3'E. Sweden.

916201	juv.M.	18.2.54	Abberton: 51°50'N. 0°53'E. (Essex) WT.
+		0.11.54	Esbjerg: 55°29'N. 8°28'E. (Jutland) Denmark.
916312	juv.M.	17.3.54	Abberton. WT.
+		1.8.54	Tranekar: 54°59'N. 10°54'E. (Langland), Denmark.
916206	M.	18.2.54	Abberton. WT.
+		5.11.54	Langeoog: 53°45'N. 7°30'E. (E. Frisian I.) Germany.
916315	M.	17.3.54	Abberton. WT.
+		2.11.54	Föhr: 54°44'N. 8°30'E. Germany.
916248	F.	2.3.54	Abberton. WT.
+		15.9.54	Keitum: 54°55'N. 8°20'E. (Sylt), Germany.
907295	F.	6.3.49	Borough Fen, Peakirk: 52°38'N. 0°11'W. (Northants). WT.
+		12.12.54	Nr. Husum: 54°30'N. 9°3'E. (Schleswig-Holstein). Germany.
913747	M.	6.1.53	Abberton. WT.
+		23.1.54	Nr. Hulst: 51°16'N. 4°3'E. (Zeeland) Holland.
914394	M.	16.2.53	Abberton. WT.
()		ca. 7.1.54	Vlijmen: 51°43'N. 5°14'E. (N. Brabant), Holland.
916172	M.	17.2.54	Abberton. WT.
+		17.11.54	Nr. Amsterdam: 52°23'N. 4°55'E. Holland.
916243	M.	25.2.54	Abberton. WT.
×		24.11.54	Lies: 53°24'N. 5°20'E. Terschelling (N. Holland).
916306	juv.F.	17.3.54	Abberton. WT.
()		ca. 20.10.54	Terschelling: 53°22'N. 5°14'E. (N. Holland).
911110	M.	8.2.52	Abberton. WT.
+		(21.11.54)	St. Pierre-Quiberon: 47°31'N. 3°7'W. (Morbihan), France..
913844	F.	22.1.53	Abberton. WT.
+		20.1.54	Nr. Jesolo: 45°30'N. 12°40'E. (Venetia), Italy.
915986	M.	11.1.54	Abberton. WT.
+		12.10.54	Suzzara: 44°59'N. 10°46'E. (Mantua) Italy.
913893	juv.M.	28.1.53	Abberton. WT.
+		9.11.54	Banks, Southport (Lancashire), 200 m N.W.
Orielton 4783	ad.M.	24.1.50	Orielton: 51°40'N. 4°57'W. (Pemb.) WT.
×		14.2.54	Cooling Marsh (N. Kent) 230 m. E.
Pintail (<i>Anas acuta</i>)			
935526	ad.F.	3.1.54	Slimbridge: 51°47'N. 2°28'W. (Glos.) WT.
+		20.10.54	Nr. Schwabstedt: 54°23'N. 9°12'E. (Schl.-Holst.) Germany.
914171	ad.M.	21.1.53	Slimbridge. WT.
+		26.3.54	Clairmarais: 50°45'N. 2°16'E. (P.-de-C.) France.
902598	ad.M.	26.1.47	Abbotsbury: 50°40'N. 2°36'W. (Dorset) WT.
+		10.1.54	Airel: 49°13'N. 1°5'W. (Manche). France.

11556	+	ad.	28.1.54 7.12.54	Abbotsbury. WT. Zoutkamp: 53°20'N. 6°18'E. (Groningen) Holland.
16862	+	ad.	5.2.54 6.11.54	Abbotsbury. WT. Belfast, Ireland. ca. 300 m. N.N.W.
Shoveler (<i>Spatula clypeata</i>)				
15385		F.	20.8.54	Borough Fen: 52°38'N. 0°17'W. Pea-kirk (Northants.) WT.
	+		9.9.54	Nr. Castlereia (Roscommon) ca. 350 m. W.N.W.
4121		F.	30.9.52	Slimbridge: 51°47'N. 2°28'W. (Glos.) WT.
	+		0.1.54	Nr. Crusheen: 52°57'N. 8°54'W. (Co. Clare) ca. 280 m. W.N.W.
6779		1stW.M.	25.8.53 16.1.54	Slimbridge. WT. Malltraeth (Anglesey) ca. 130 m. N.W.
5327		M.	31.12.53 21.9.54	Slimbridge. WT. Gjorlev: 55°34'N. 11°15'E. (Sjaelland), Denmark.
5325		M.	31.12.53 7.2.54	Slimbridge. WT. Beauregard: 44°13'N. 0°37'E. (L.-et-Gne.) France.
5501		1stW.F.	12.9.53 8.1.54	Slimbridge. WT. Leon Étang: 43°53'N. 1°18'W. (Landes) France.
5628		1stW.M.	29.9.53 5.2.54	Slimbridge. WT. St. Gilles-sur-Vie: 46°42'N. 1°55'W. (Vendée) France.
5630		1stW.M.	29.9.53 ca. 21.2.54	Slimbridge. WT. St. Joachim: 47°26'N. 2°12'W. (Loire-Inf.) France.
ing Clip 149	O	pull.	18.7.53	Abberton: 51°50'N. 0°53'E. (Essex). WT.
	+		12.8.54	Nr. Le Havre: 49°30'N. 0°6'E. (S. Inf.) France.
ing Clip 138	O	pull.	5.7.53 7.3.54	Abberton. WT. Nr. Monte Real: 39°51'N. 8°53'W. Portugal.
5838		F.	24.4.54 13.8.54	Abberton. WT. Lungholm: ca. 54°39'N. 11°34'E. (Laalland) Denmark.
Tufted Duck (<i>Aythya fuligula</i>)				
300	O	pull.	21.6.53	Nr. Orton: 54°28'N. 2°35'W. (Westmorland). RWR.
	+		7.2.54	Kilmore (Co. Wexford) 220 m. S.W.
2076		juv.	4.9.52 6.1.54	St. James's Park, London. LNHS. Lusignan: 46°26'N. 0°8'E. (Vienne) France.
Pochard (<i>Aythya ferina</i>)				
788		M.	11.10.53	Abberton: 51°50'N. 0°53'E. (Essex). WT.
	+		11.11.54	Woodburn, Carrickfergus (Co. Antrim) ca. 330 m. N.W.
Shelduck (<i>Tadorna tadorna</i>)				
8188	O	pull.	2.8.53	Aberlady Bay: 56°1'N. 2°51'W. (E. Lothian). HM&M.
	+		6.1.54	King's Lynn marshes. (Norfolk) 270 m. S.E.

Grey Lag Goose (*Anser anser*)

142875		ad.	22.11.52	Montrose: 56°42'N. 2°28'W. (Angus) WT.
	+		ca. 7.11.54	Arnside (Westmorland) 170 m. S.
143265		ad.	14.11.53	Loch Leven: 56°12'N. 3°25'W. (Kinross). WT.
	+		23.2.54	Rogerstown Bay (Co. Dublin) 220 S.W.
143254		ad.	14.11.53	Loch Leven. WT.
	+		15.1.54	Nr. Crossgar (Co. Down) ca. 150 m. S.W.
143269		ad.	14.11.53	Kinross: ca. 56°17'N. 3°25'W. WT.
	+		23.1.54	Downpatrick (Co. Down) 160 m. S.
143268		1stW.	14.11.53	Loch Leven. WT.
	×		27.1.54	Nr. Downpatrick (Co. Down) 160 S.W.
143351		ad.	14.11.53	Kinross. WT.
	+		22.4.54	Holt: 63°50'N. 20°36'W. Rang, Iceland.
143407		1stW.	14.11.53	Kinross. WT.
	+		29.4.54	Villingaholt: 63°56'N. 20°43'W. A. Iceland.

White-fronted Goose (*Anser albifrons*)

129130		ad.	27.2.50	Slimbridge: 51°47'N. 2°28'W. (Glo) WT.
	+		12.1.54	Dollart: 53°17'N. 7°10'E. (E. Fr) land). Germany.
SWT 13		ad.	22.2.52	Slimbridge. WT.
	+		30.1.54	Hulst: 51°16'N. 4°3'E. (Zeeland), Holland.
SWT 37		ad.	29.2.52	Slimbridge. WT.
	+		4.1.54	Lemmer: 52°52'N. 5°43'E. (Friesland) Holland.
129320		1stW.F.	17.2.53	Slimbridge. WT.
	×		11.3.54	Grouw: 53°7'N. 5°50'E. (Friesland) Holland.
130053		ad.	25.2.51	Slimbridge. WT.
	+		14.2.54	Nr. Isigny: 48°37'N. 1°10'W. (Manche), France.
129136		juv.?	27.2.50	Slimbridge WT.
	+		13.2.54	Chieti: 42°23'N. 14°10'E. (Abruzzo) Italy.

Pink-footed Goose (*Anser arvensis brachyrhynchus*)

142439		ad.	25.10.52	(Yorkshire) WT.
	+		5.5.54	Holtakot: 64°15'N. 20°20'W. Biskostungur, Arn, Iceland.
144371		ad.	18.10.53	(Yorkshire) WT.
	×		6.12.53	Nr. Tyborön: 56°42'N. 8°13'E. (Jutland), Denmark.

The remaining 183 recoveries were in the British Isles; 116 in the winter of ringing and 39, 18, 7 and 3 in the first, second, third and fourth successive winters after ringing, respectively.

Buzzard (*Buteo buteo*)

AE 6998	O	pull.	1.7.53	Wrangaton: 50°24'N. 3°51'W. (Devon), HGH.
	×		6.2.54	South Brent (Devon) ca. 4 m. N.E.

Sparrowhawk (*Accipiter nisus*)

382108	1st W.M.	2.9.53	Fair Isle: 59°32'N. 1°37'W. (Shetland).
×		20.11.53	Voorschoten: 52°7'N. 4°26'E. (Z-Holland).
381522	juv. M.	28.6.53	Longcross: 51°22'N. 0°35'W. Chertsey (Surrey). LNHS.
()		(29.3.54)	Nr. West Malling (Kent) 45 m. E.S.E.
	Marsh Harrier (<i>Circus æruginosus</i>)		
383600	O juv.	14.6.54	Hickling Broad: 52°45'N. 1°35'E. (Norfolk). ED.
+		4.8.54	Nr. King's Lynn (Norfolk) ca. 45 m. W.

Hen Harrier (*Circus cyaneus*)

Four birds ringed in Orkney by E. Balfour were subsequently recovered locally. Two had been ringed in 1953, two in 1954.

Peregrine (*Falco peregrinus*)

07258	O	pull.	27.6.50	Cape Wrath: 58°37'N. 5°1'W. (Sutherland). IDP.
×			(20.10.54)	Tomintoul (Banffshire) 110 m. S.E.

Merlin (*Falco columbarius*)

82100		juv. F.	18.8.54	Fair Isle: 59°32'N. 1°37'W. (Shetland).
+			9.10.54	Muchalls, Banchory (Kincards.) 170 m. S.S.W.
82078	M.		15.9.54	Fair Isle.
v			8.10.54	Capbreton: 43°38'N. 1°20'W. (Landes), France .

Kestrel (*Falco tinnunculus*)

67308	O	pull.	10.6.52	Redesdale: ca. 55°14'N. 2°11'W. (Northumb.) ND&N.
+			(1.3.54)	Nr. Valenciennes: 50°21'N. 3°32'E. (Nord), France .
76712	O	pull.	25.7.54	Nr. Whitewell, Clitheroe: 53°56'N. 2°33'W. (Lancs.) JJB.
()			20.11.54	Nr. La Tranche: 46°21'N. 1°26'W. (Vendée), France .
76061	O	pull.	9.7.53	Goyt Valley: ca. 53°15'N. 2°0'W. (Derbys.). K&M.
v			9.2.54	Ditton Priors, Bridgnorth (Salop) 55 m. S.S.E.
68818	O	pull.	26.6.53	Goxhill: 53°41'N. 0°20'W. (Lincs.) HV.
×			7.12.54	Fakenham (Norfolk) 75 m. S.E.
55851	O	pull.	23.6.54	Lynford, Mundford: 52°31'N. 0°39'E. (Norfolk). LH.
×			10.8.54	Sutton-on-Sea (Lincs). 43 m. N.N.W.
51479	ad.		6.1.53	Abberton: 51°50'N. 0°53'E. (Essex). CBW.
()			15.4.54	Diss (Norfolk) 40 m. N.N.E.
77740	O	pull.	23.7.54	Shoreham: 50°50'N. 1°16'W. (Sussex). JS.
×			(18.10.54)	Nr. Kings Ferry, I. of Sheppey (Kent) 57 m. N.E.
ED 7722	O	pull.	3.12.50	Duddingston Loch: 55°56'N. 3°9'W. (Midlothian). DRA.
×			(6.6.54)	Nr. Lochgelly (Fife) 14 m. N.N.W.

Moorhen (*Gallinula chloropus*)

AE 8309	O	pull.	28.7.53	Denton: 53°56'N. 1°47'W. Ilkley, (Yorks.). D&I.
AF 7844	×	ad.	11.6.54 1.8.53	Summerseat, Bury (Lancs.) 30 m. S.W.
	×		30.4.54	Abberton: 51°50'N. 0°53'E. (Essex) CBW.
AF 9550	×	ad.	28.3.54 27.7.54	Fersfield, Diss (Norfolk) ca. 40 m. N.N.E.
908361	×	ad.	21.2.50	Abberton, CBW.
	×		28.1.54	Rushden, Buntingford (Herts.) 40 m. W.N.W.
				Old Hall Marsh: ca. 51°47'N. 0°53'E. (Essex). WT.
				R. Stour, Canterbury (Kent) ca. 35 m. S.S.E.

Coot (*Fulica atra*)

AF 5822		ad.	17.2.53	Abberton: 51°50'N. 0°53'E. (Essex) CBW.
	×		12.2.54	Maasholm: 54°44'N. 10°0'E. Schleiburg, Germany .
AE 3885	+	ad.	6.2.51 29.12.53	Abberton: CBW.
AE 3897	×	ad.	21.2.51 Winter '53/'54	Faarup: 56°32'N. 9°52'E. Denmark
	×			Abberton, CBW.
AF 9487		ad.	6.3.54 Winter '53/'54	Makkumerwaard: 53°4'N. 5°24'E. (Friesland), Holland .
AE 8778	×	ad.	23.1.52 8.1.54	Abberton, CBW.
	/?/			Sallenelles: 49°17'N. 0°13'W. (Calvados). France .
AF 1016	×	ad.	22.3.52 (19.4.54)	Abberton, CBW.
	×			Nailsea (Somerset) 160 m. W.S.W.

Oystercatcher (*Haematopus ostralegus*)

344096	O	pull.	24.6.52	Fair Isle: 59°32'N. 1°37'W. (Shetland).
	v	ca.	10.5.54	Mornington, Drogheda (Co. Meath) 400 m. S.W.
344183	O	pull.	16.6.53	Fair Isle.
	×		11.2.54	Eastriggs, Annan (Dumfriesshire) 320 m. S.S.W.
344186	O	pull.	18.6.53	Fair Isle.
	×		4.7.54	Elie (Fife) 240 m. S.S.W.
366924	O	pull.	23.5.53	Newtonmore: 57°4'N. 4°7'W. (Inverness). R.P.
	×		30.5.54	Nr. Ferryside (Carms.) 360 m. S
366938	O	pull.	29.5.53	Newtonmore, RP.
	v		3.3.54	Nr. Fleetwood (Lancs.) 220 m. S.
330289	O	pull.	5.6.50	Coylumbridge, Aviemore: 57°10'N. 3°49'W. (Invernesshire) LNHS.
	+		26.2.54	Nr. Doonbeg (Co. Clare). 370 m. S.W.
383572	O	juv.	10.7.54	Scot Head: 52°58'N. 0°44'E. (Norfolk). ED.
	×		(16.10.54)	St. Jean-le-Thomas: 48°44'N. 1°31'W. (Manche) France .
354271	O	pull.	28.5.53	Skokholm: 51°42'N. 5°16'W. (Pemb.)
	+		0.10.54	Roscoff: 48°44'N. 3°59'W. (Finistère) France .
354320	O	pull.	7.6.53	Skokholm.
	×		20.7.54	Ars-en-Ré: 46°13'N. 1°32'W. Ile de Ré (Ch.-Inf.), France .

Lapwing (*Vanellus vanellus*)

272023	O	pull.	22.5.53	Pitlochry: 56°42'N. 3°44'W. (Perth). WNS.
	×		24.5.54	Brønderslev: 57°15'N. 9°55'E. (Jutland), Denmark .
257885	O	pull.	7.5.52	Blagdon, Seaton Burn: 55°5'N. 1°39'W. (North'd.) A&R.
	+		17.3.54	Troarn: 49°11'N. 0°12'W. (Calvados), France .
255347	O	pull.	15.5.53	Nr. Up Ottery: 50°52'N. 3°9'W. (Devon), JR.
	+		10.2.54	Nr. Fouesnant: 47°54'N. 4°1'W. (Finistère) France .
255335	O	pull.	17.5.52	Nr. Up Ottery. JR.
	+		26.2.54	Nr. Luçon: 46°27'N. 1°10'W. (Vendée), France .
250117	O	pull.	4.6.49	Collieston: 57°21'N. 1°56'W. (Aberdeen). GAR.
	+		27.2.54	St. Gildas: 47°32'N. 2°50'W. (Morbihan), France .
274433	O	pull.	11.6.53	Langwathby: 54°42'N. 2°39'W. (Cumb.). WH.
	+		2.2.54	Cap Ferret: 44°38'N. 1°15'W. (Gironde), France .
275273	O	pull.	28.5.53	Whitsbury Down: 50°58'N. 1°50'W. (Hants.) A&R.
	()		31.1.54	Dax: 43°42'N. 1°3'W. (Landes), France .
260558	O	pull.	9.5.51	Burnham: 51°33'N. 0°39'W. (Bucks.) JF.
	+		2.2.54	St. Martin: 43°33'N. 1°23'W. (Landes), France .
448293	O	pull.	26.5.50	Nr. Colne: 53°52'N. 2°10'W. (Lancs.) KGS.
	+		10.2.54	Estarreja: 40°30'N. 8°30'W. Portugal .
75051	O	pull.	26.5.53	Raisbeck, Orton: 54°28'N. 2°35'W. (West'd). ACW.
	X		0.2.54	Vila Verde: 40°8'N. 8°50'W. Figueria Da Foz, Portugal .
660011	O	pull.	10.5.52	Skokholm: 51°42'N. 5°16'W. (Pemb.)
	/ ? /		14.3.53	Vila Franca de Xira: 38°37'N. 9°5'W. Portugal .
69388	O	pull.	4.7.53	Nr. Stockton-on-Tees: 54°34'N. 1°19'W. (Durham). PAR.
	+		10.2.54	Nr. Gijón: 43°33'N. 5°40'W. (Asturias), Spain .
74075	O	pull.	21.5.53	Nr. Appleby: 54°35'N. 2°30'W. (West'd). RWR.
	+		0.2.54	Gijón, Spain .
70034	O	pull.	7.7.53	Tomintoul: 57°15'N. 3°21'W. (Banff). HV.
	×		(23.2.54)	Villafranca: 37°55'N. 4°35'W. (Córdoba), Spain .
60791	O	pull.	2.5.53	Carmyllie: 56°34'N. 2°44'W. (Angus). AC.
	+		ca. 14.2.54	Nr. Rota: 36°37'N. 6°22'W. (Cádiz), Spain .
71190	O	pull.	10.5.53	Litton: 54°10'N. 2°8'W. (Yorks.) W&M.
	+		10.1.54	Sidi Slimane: 34°20'N. 5°56'W. French Morocco .

232823	ad.F.	1.6.53	Abberton: 51°50'N. 0°53'E. (Essex) CBW.
+		7.2.54	Cherrat, Nr. Boulhaut: 33°35'N. 7°0'W. Morocco.

In addition to the foregoing records, six recoveries showed winter movement from Scotland and northern England into Ireland, and four others showed south-westerly movement in winter of over 100 miles. The 58 birds recovered during 1954 had been ringed as follows:—1945 (1), 1947 (1), 1949 (2), 1950 (4), 1951 (6), 1952 (8), 1953 (22), and 1954 (14).

Ringed Plover (*Charadrius hiaticula*)

X97502	O	juv.	20.6.54	Silverdale: 54°11'N. 2°49'W. Arnsid (Lancs.). RPC.
+			12.12.54	Frontignan: 43°27'N. 3°45'E. Hérault), France.
14865	O	pull.	25.6.49	St. Osyth: 51°49'N. 1°5'(Essex). RWA.
	v		ca. 13.6.54	St. Osyth.
W11009	O	pull.	19.6.54	Bradwell: 51°44'N. 0°54'E. (Essex) RS.
+			ca. 22.8.54	Seasalter, Whitstable (Kent) 27 m. S

Golden Plover (*Charadrius apricarius*)

270135	O	pull.	11.6.53	Skiddaw Fells: ca. 54°40'N. 3°10'W (Cumb.). RHB.
+			9.2.54	Foulney I. Barrow (Lancs.) ca. 45 m S.S.W.

Snipe (*Capella gallinago*)

X49210	ad.		26.8.53	Bamburgh: 55°36'N. 1°42'W. (North'd). MHBO.
	+		1.1.54	Ballyheige (Co. Kerry) 390 m. S.W.
S 1450	O	pull.	21.5.52	Barley: ca. 53°52'N. 2°13'W. Nelson (Lancs.). W&M.
	+		14.2.54	Whitechurch (Co. Cork) 290 m. W.S.W.
X63795	ad.		16.10.53	Abberton: 51°50'N. 0°53'E. (Essex) CBW.
	+		6.2.54	Arthon-en-Retz: 47°7'N. 1°51'W. (Loire Inf.), France.
X24241	ad.		27.8.52	Abberton. CBW.
	+		9.11.54	Kollumerzwaag: ca 53°17'N. 6°8'E (Friesland), Holland.
X63928	ad.		21.12.53	Abberton. CBW.
	×		6.2.54	Kerhuon: 48°21'N. 4°23'W. (Finistère) France.

Jack Snipe (*Limnocyptes minimus*)

X45751	ad.		24.12.53	Wallingford: 51°37'N. 1°8'W. (Berks.) OOS.
	+		5.2.54	Heras: 43°25'N. 3°47'W. (Santander), Spain.

Woodcock (*Scolopax rusticola*)

272815	ad.		28.10.53	Dungeness: 50°55'N. 0°59'E. (Kent).
	+		8.2.54	Ushant: 48°28'N. 5°10'W. (Finistère) France.

Curlew (*Numenius arquata*)

370148	O	pull.	15.6.52	Eassie: 56°36'N. 3°4'W. (Angus). AC.
	+		(6.12.54)	Ennis (Co. Clare) 350 m. S.W.
383813	O	pull.	11.6.54	Langwathby: 54°42'N. 2°39'W. (Cumb). WH.
	×		22.10.54	Nr. Dundalk (Co. Louth) 150 m. W.S.W.

Common Sandpiper (*Tringa hypoleucos*)

X19478	ad.	23.7.52	Abberton: 51°50'N. 0°53'E. (Essex). CBW.
	×	20.8.54	Crowle (Lincs.) 140 m. N.W.
X19484	ad.	28.7.52	Abberton. CBW.
	×	30.4.54	St. André: 48°17'N. 4°3'E. Troyes (Aube), France .

Redshank (*Tringa totanus*)

X23668	O	pull.	15.6.53	Glen Brerachan: 56°45'N. 2°36'W. (Perth.) AC.
	×		3.2.54	Waterloo, Liverpool (Lancs.) 230 m. S.
PF 642	O	pull.	10.6.51	Aberlady Bay: 56°1'N. 2°51'W. (E. Lothian). KSM.
	×		11.3.54	East Mersea (Essex) ca. 330 m. S.E.
W 192	ad.		6.7.50	Abberton: 51°50'N. 0°53'E. (Essex). CBW.
	×		15.5.54	Nr. Edmonton, London (N.18) 40 m. S.W.

Dunlin (*Calidris alpina*)

X93463	juv.		1.8.54	Benacre: 52°24'N. 1°43'E. (Suffolk) AGH.
	+		4.8.54	Baie de l'Orne: ca. 49°18'N. 0°15'W. (Calvados), France . ca. 230 m. S.S.W.

This is the second foreign recovery of a British-ringed Dunlin!

Arctic Skua (*Stercorarius parasiticus*)

X37606	O	pull.	3.7.50	Fair Isle: 59°32'N. 1°37'W. (Shetland).
	×		0.7.54	Papa Westray (Orkney) 45 m. W.S.W.

Great Skua (*Stercorarius skua*)

H2572	O	pull.	26.7.54	Hascosay (Shetland) 60°36'N. 1°0'W. EC.
	×		7.10.54	Katwijk: 52°13'N. 4°25'E. (Z. Holland).

Great Black-backed Gull (*Larus marinus*)

X06431	O	pull.	22.7.52	Summer I. (W. Ross) 58°1'N. 5°27'W. JF.
	()		0.10.52	Off Helmsdale (Sutherland) ca. 65 m. E.
X8442	O	pull.	10.7.53	Blasket Is. 52°5'N. 10°32'W. (Co. Kerry). SMDA.
	+		7.2.54	Leixoes: 41°10'N. 8°45'W. Portugal .
X06248	O	pull.	18.7.47	Skokholm: 51°42'N. 5°16'W. (Pemb.)
	×		11.2.54	Ferry carrig (Co. Wexford) 70 m. N.W.

Lesser Black-backed Gull (*Larus fuscus*)

FF 6227	O	pull.	10.7.53	Flanders Moss: 56°13'N. 4°20'W. (Stirling). MHBO.
	×		15.12.53	Melilla: 35°17'N. 3°0'W. Spanish Morocco .
FF 8670	O	pull.	22.8.53	Flanders Moss. MHBO.
	()		21.2.54	Las Palmas: 28°6'N. 15°30'W. Canary Is.
FF 8721	O	pull.	22.8.53	Flanders Moss. MHBO.
	?	before	1.3.54	Off C. Blanco: 21°0'N. 16°59'W. Rio de Oro .
FF 8800	O	pull.	10.8.53	Farne Is. 55°37'N. 1°37'W. (North'd). ND&N.
	×		31.5.54	Nr. Torekov: 56°25'N. 12°35'E. (Kris- tianstad), Sweden .

AF 8736	O +	pull.	10.8.53 0.3.54	Farne Is. ND&N. Rota: 36°37'N. 6°20'W. (Cádiz), Spain.
AF 8859	O /?/	pull.	20.8.53 4.3.54	Farne Is. ND&N. Nr. C. Mondego: 40°11'N. 9°36'W. Portugal.
AF 8847	O +	pull.	20.8.53 4.6.54	Farne Is. ND&N. Nr. Setubal: 38°30'N. 8°55'W. (Est. madura), Portugal.
AF 6043	O ()	pull.	29.8.52 (20.1.54)	Farne Is. ND&N. Nr. Villa Real de St. Antonio: 37° N. 7°23'W. (Algarve), Portugal.
AF 8803	O ×	pull.	10.8.53 19.3.54	Farne Is. ND&N. Safi: 32°19'N. 9°12'W. French Morocco.
AF 8919	O ×	pull.	20.8.53 25.1.54	Farne Is. ND&N. Rufisque: 14°42'N. 17°15'W. Senegal.
AH 1908	O ×	pull.	4.7.54 29.9.54	Walney I. 54°5'N. 3°15'W. (Lancs.) ACW. Plouguerneau: 48°37'N. 4°31'W. (Finistère) France.
AF 9951	O +	pull.	4.7.54 0.10.54	Walney I. JWA. Azurara: 41°20'N. 8°50'W. Portugal.
AE 3114	O ×	pull.	27.7.50 early 1954	Nr. Lancaster. ca. 54°3'N. 2°35'W. (Lancs.). D&I. Sables d'Olonne: 46°31'N. 1°46'W. (Vendée), France.
AE 9593	O ()	pull.	16.7.53 (22.10.54)	Nr. Lancaster. GAB. Caminha: 41°51'N. 8°49'W. (Minho) Portugal.
AE 8848	O +	pull.	2.7.52 18.6.54	Nr. Lancaster. W&M. Castellón de la Plana: 39°59'N. 0°3'W. Spain.
AD 7548	O ()	pull.	22.7.51 0.4.54	Nr. Lancaster. GAB. Nr. Ayamonte: 37°15'N. 7°22'W. (Huelva), Spain.
AE 3013	O ×	pull.	15.7.51 2.3.54	Nr. Lancaster. RFD. Faro: 37°2'N. 7°54'W. Portugal.
AE 9568	O /?/	pull.	16.7.53 30.1.54	Nr. Lancaster. GAB. Arzen: 35°51'N. 0°19'W. Algeria.

Three adults from Mochrum Loch, Wigtownshire, ringed 1948 (1) and 1949 (2) and released from Jersey, Cambridge and Glasgow, were recovered in Galloway during 1954.

Herring Gull (*Larus argentatus*)

AH 1801	O	pull.	17.7.54	Bass Rock: 56°4'N. 2°38'W. (E. Lothian). ATM.
AF 6402	×		20.9.54	Preesall, Fleetwood (Lancs.) 150 m. S.
	O	pull.	19.7.53	Isle of May. 56°11'N. 2°33'W.
	×		24.2.54	Nr. Barrow in Furness (Lancs.) 145 m. S.S.W.
AF 3237	O	pull.	6.7.52	Scilly Is. 49°56'N. 6°17'W. W&M.
	×		23.4.54	Nr. Piriac: 47°25'N. 2°30'W. (Morbi- han). France.

Black-headed Gull (*Larus ridibundus*)

349708	O	pull.	26.6.50	Nr. Leuchars: 56°22'N. 2°53'W. (Fife). AC.
	×		15.5.54	Ilton Moor, Masham (Yorks.) 160 m. S.S.E.

33864	O	pull.	7.6.53	Tentsmuir: 56°27'N. 2°49'W. (Fife). JG.
	×		7.3.54	Limerick. 350 m. S.W.
66164	O	pull.	5.7.52	Ravenglass: 54°21'N. 3°25'W. (Cumb.) AEM.
	×		6.6.54	Poole Harbour (Dorset) 260 m. S.S.E.
52352	O	pull.	27.6.52	Swillington, Leeds: 53°47'N. 1°25'W. (Yorks.) WDH.
	/?/		11.3.54	Rabat: 34°2'N. 6°50'W. Morocco.
1029	O	pull.	22.6.52	Heptonstall Moors: 53°47'N. 2°1'W. (Yorks.) W&M.
	×		6.6.54	Tring (Herts.) 150 m. S.E.
3272	O	pull.	22.6.54	Rhosgoch Common: 52°7'N. 3°11'W. (Rads.) PJC.
	×		ca. 7.8.54	Thurstaston (Cheshire) 85 m. N.
8212		ad.	31.1.54	Colchester: 51°54'N. 0°55'E. (Essex). CGC.
	×		6.5.54	Leeuwarden: 53°13'N. 5°48'E. (Friesland) Holland.
6981	O	pull.	20.6.49	Abberton: 51°50'N. 0°53'E. (Essex). CBW.
	×		19.8.54	Builth Wells (Breconshire) 180 m. W.N.W.
2138		ad.	26.2.48	Blackfriars, London. LNHS.
	×		8.4.54	Kiel: 54°25'N. 10°13'E. Germany.
5895		ad.	29.1.52	St. James's Park, London. LNHS.
	+		11.8.54	Wilnis: 52°12'N. 4°55'E. (Utrecht), Holland.
4790		ad.	30.12.43	St. James's Park, London. LNHS.
	v		10.1.44	ibid.
	v		26.2.48	ibid.
	v		27.11.54	ibid.
9571		juv.	30.1.49	Littleton Res.: 51°26'N. 0°28'W. (Middx.) PADH.
	×		24.4.54	Boreveje, Roskilde Fjord: 55°50'N. 12°0'E. Denmark.

Save for a bird in Senegal, the Rabat bird is the most southerly recovery for this species.

Kittiwake (*Rissa tridactyla*)

254	O	pull.	26.6.52	Farne Is.: 55°37'N. 1°37'W. (North'd) ND&N.
	+		18.3.54	Julianehaab region: 61°N. 48°W. Greenland.
5541	O	pull.	11.7.53	Farne Is. ND&N.
	×		4.7.54	Hvaler Is. ca. 59°5'N. 11°0'E. Oslo-fjord. Norway.
2200	O	pull.	3.7.53	Farne Is. ND&N.
	×		28.1.54	Hallo Lighthouse, Smøgen: 58°25'N. 11°11'E. Sweden.
415	O	pull.	16.7.53	Farne Is. ND&N.
	×		(5.4.54)	Wissant: 50°53'N. 1°40'E. (P.-de-C.) France.
573	O	pull.	19.7.53	Maughold Head: 54°18'N. 4°19'W. Isle of Man. CCM&P.
	×		12.8.54	Brittas Bay (Co. Wicklow) 120 m. S.W.
936	O	pull.	16.7.54	Lundy I.: 51°12'N. 4°40'W. (Devon).
	×		(24.10.54)	St. Annes (Lancs.) 190 m. N.N.E.
848	O	pull.	19.7.53	Lundy.
	×		28.8.54	Scarborough (Yorks.) 280 m. N.E.

A further four Farne Is. birds were recovered 100-140 miles S. in Yorkshire, one having been ringed in 1954, the remainder in 1953.

Common Tern (*Sterna hirundo*)

Witherby J2925	O	pull.	29.6.29	Walney I.: 54°5'N. 3°15'W. (Lancs. HWR.
	×		13.6.54	Ravenglass: 54°21'N. 3°25'W. (Cumb.) ca. 15 m. N.W.

This is the oldest bird so far recorded by the British ringing scheme. The bird was found decapitated beside a nest containing eggs. The ring was full and legible.

Arctic Tern (*Sterna macrura*)

V 3343	O	pull.	31.7.48	Tentsmuir: 56°27'N. 2°49'W. (Fife) AC.
	×		4.6.54	Zarauz: 43°18'N. 2°10'W. (Guipuzcoa), Spain .
TC 705	O	pull.	26.6.39	Farne Is.: 55°37'N. 1°37'W. (North'd.) TEH.
	v		0.6.54	ibid.
Witherby ZL302	O	pull.	7.7.35	Farne Is. BS.
	v		0.6.54	ibid.
Witherby ZP98	O	pull.	1.7.36	Farne Is. ND&N.
	v		0.6.54	ibid.

Roseate Tern (*Sterna dougallii*)

X58572	O	pull.	23.7.54	Firth of Forth: ca. 56°10'N. 2°50'W. MOC.
	v		26.9.54	Aboard ship S. Irish Sea. ca. 51°7'W.
R2683	O	pull.	17.7.53	Firth of Forth. DGA.
()			24.11.53	Princess Town, 4°45'N. 2°8'W. Axir Gold Coast .
X26312	O	pull.	17.7.53	Firth of Forth. MOC.
()			24.11.53	Princess Town, Gold Coast .
X26146	O	pull.	25.7.52	Firth of Forth. MOC.
	×		2.7.54	Norderney: 53°43'N. 7°9'E. (E. Frisia land), Germany .

Little Tern (*Sterna albifrons*)

BC 235	O	pull.	12.6.49	St. Osyth: 51°49'N. 1°5'E. (Essex) RWA.
	/ ? /		26.4.54	Fort Mardyck: 51°2'N. 2°22'E. Dunkirk (Nord), France .

Sandwich Tern (*Sterna sandvicensis*)

263116	O	pull.	21.7.53	Firth of Forth: 56°10'N. 2°50'W. HM&M.
	v		7.3.54	Nr. Dakar: 14°40'N. 17°26'W. Senegal .
279342	O	pull.	2.7.53	Lady I., Troon: 55°31'N. 4°44'W. (Ayr). SSPB.
	v		0.12.53	Port Alexandre: 15°52'S. 11°48'E. Angola .
279338	O	pull.	26.6.53	Lady I. SSPB.
/ ? /			27.8.54	Lobito: 12°20'S. 13°34'E. Angola .
277000	O	pull.	8.7.54	Farne Is. 55°37'N. 1°37'W. (North'd.) ND&N.
	×		16.8.54	Rattray Head (Aberdeenshire) 135 m. N.
276717	O	pull.	4.7.53	Farne Is. ND&D.
	+		ca. 7.1.54	Etang de Berre: 43°25'N. 5°10'E. B.-du-Rh.) France .
276361	O	pull.	9.7.53	Farne Is. ND&N.
()			26.2.54	Gibraltar : 36°8'N. 5°10'W.

81212	O v	juv.	8.7.54 4.11.54	Farne Is. ND&N. Nr. Dakar: 14°40'N. 17°26'W.
81198	O x	pull.	6.8.54 14.11.54	Senegal. Farne Is. ND&N. Nr. Accra. 5°31'N. 0°15'W. Gold Coast.
72442	O /?/	pull.	10.7.52 21.2.54	Farne Is. ND&N. R. Comoe, Grand-Bassam: 5°10'N. 3°46'W. Ivory Coast.
64454	O ()	pull.	21.7.51 2.12.54	Farne Is. ND&N. Keta Lagoon: 5°54'N. 1°0'E. Gold Coast.
76443	O ()	pull.	4.7.53 12.2.54	Farne Is. ND&N. Keta Lagoon, Gold Coast.
7874	O ()	pull.	2.7.52 1954	Farne Is. ND&N. Alakpe: 5°52'N. 0°52'E. Keta, Gold Coast.
Razorbill (<i>Alca torda</i>)				
X 3321	O ()	pull.	11.7.51 16.3.54	Skokholm: 51°42'N. 5°16'W. (Pemb.) Nr. Castiglione: 36°39'N. 2°40'E.
V 9622	O /?/	pull.	15.7.50 0.1.54	Algeria. Skokholm. Contis Estuary (Landes) 44°7'N. 1°25'E. France.
TT10785	x	ad.	1.7.53 16.3.54	Lundy: 51°12'N. 4°40'W. (Devon). Whitstable (Kent) 250 m. E.
TT10771	O x	pull.	25.6.53 ca. 25.11.53	Lundy. Ushant: 48°28'N. 5°10'W. (Finistère) France.
TT10763	O ()	pull.	24.6.53 5.3.54	Lundy. Ile de Ré: 46°14'N. 1°33'W. (Ch. Mtme.) France.
TT10783	O +	pull.	30.6.53 0.3.54	Lundy. Port St. Louis: 43°23'N. 4°48'E. (B.-du-R.) France.
TT 6280	+ +	ad.	21.7.50 ca. 15.1.54	Lundy. Javea: 38°48'N. 0°12'E. (Alicante) Spain.
Guillemot (<i>Uria aalge</i>)				
FE 2271	O x	pull.	3.7.52 1.1.54	Cruden Bay: 57°26'N. 1°51'W. (Aberdeenshire). HNS. Nr. Koog: ca. 53°14'N. 4°47'E. Texel, Holland.
TT14405	O x	pull.	2.7.53 7.6.54	Sheep I.: 55°16'N. 6°21'W. (Co. Antrim). JAB.
AX 9644	O x	pull.	9.7.52 1.6.54	L. Nevis (Inverness-shire) 125 m. N. Farne Is. 55°37'N. 1°37'W. (North'd). ND&N.
AX 8397	O x	pull.	6.7.51 (18.12.54)	Drumby Head, Cruden Bay (Aberdeen) 130 m. N. Puffin I.: 53°19'N. 4°1'W. (Anglesey). TH&G.
TT10421	O x	pull.	6.7.52 ca. 10.12.54	R. Dee (Kirkcudbright) 100 m. N. Lundy: 51°12'N. 4°40'W. (Devon). Weymouth (Dorset) 105 m. E.S.E.
Puffin (<i>Fratercula arctica</i>)				
TT13991	O x	pull.	19.7.53 28.1.54	Fair Isle: 59°32'N. 1°37'W. (Shetland) Seaton Carew, West Hartlepool (Durham) 340 m. S.

AT 5455	ad.	27.7.46	Skomer: 51°44'N. 5°19'W. (Pemb. RML.
×		6.5.54	Nr. C. Ferret: 44°47'N. 1°16'W. (Gironde), France.
AT 24320	ad.	24.7.54	Skokholm: 51°42'N. 5°16'W. (Pemb.)
v	ca.	28.7.54	Llantwit Major (Glam.) 75 m. E.S.E.
			Stock Dove (<i>Columba ænas</i>)
314458	ad.	8.6.50	Esholt: 53°51'N. 1°43'W. Bradford (Yorks.) D&I.
+		5.2.54	Topcliffe, Thirsk (Yorks.) 35 m. N.E.
			Woodpigeon (<i>Columba palumbus</i>)
364737	O	pull.	29.7.52
×			12.1.54
336157	O	pull.	25.6.50
+			0.2.54
			Turtle Dove (<i>Streptopelia turtur</i>)
262393	O	pull.	17.6.54
+			29.8.54
			Portugal.
355048	O	pull.	21.6.53
[?]			11.5.54
			France.
272766	O	pull.	0.8.54
+			23.9.54
			France.
335112	O	pull.	28.6.51
+			8.5.54
			France.
226139	juv.	23.8.52	Abberton: 51°50'N. 0°53'E. (Essex). CBW.
+			6.5.54
			Spain.
			Barn Owl (<i>Tyto alba</i>)
AF 7048	O	pull.	27.6.54
×			(28.9.54)
			Little Owl (<i>Athene noctua</i>)
350666	O	pull.	26.6.51
v			27.3.54
331274	O	juv.	28.6.52
×			(3.5.54)
			Tawny Owl (<i>Strix aluco</i>)
AF 6141	O	pull.	5.5.53
×			19.12.53
AE 8907	O	pull.	7.5.52
×			29.4.54
			Long-eared Owl (<i>Asio otus</i>)
AN 7113	f.g.	6.11.50	Fair Isle: 59°32'N. 1°37'W. (Shet- land).
+			8.12.54
			Hundvaag: 59°0'N. 5°44'E. (Stavaan- ger), Norway.



By permission of Canadair Ltd.

IMPRESSION OF PIGEON (*Columba sp.*) ON AIRCRAFT; CARTIERVILLE, QUÉBEC, CANADA 16TH NOVEMBER 1954

This remarkable photograph was taken after a jet trainer—the Canadair T.33 “Silver Star”—which was being brought in to land, had flown through a flock of pigeons, killing at least 10. A complete impression of one of them was left on the port wing-tip tank and is thought to have been caused by the bird’s powder-down. Signed statements were taken from witnesses by a Notary Public.



Gösta Håkansson

GULLNAST WARMER (*Phylloscopus trochiloides*); VISBY, GOTLAND, SWEDEN, 24th JUNE 1953
 In none of these photographs is there any sign of the pale wing-bar that characterizes this species, but here the extent of the yellowish-white supercilium, which is longer and more pronounced than in the Chiffchaff



Gosta Hakansson

GREENISH WARBLER (*Phylloscopus trochiloides*): VISBY, GOTLAND, SWEDEN, 24TH JUNE 1953
Field-identification of this species is difficult if the wing-bar cannot be seen and is dependent on a combination of the supercilium, the dark legs and a tendency to grey on the head and rump, but the bird is very variable and the song is often the only certain character (see page 500).



Gösta Håkansson

GREENISH WARBLER (*Phylloscopus trochiloides*): VISBY, GOTLAND, SWEDEN, 24th JUNE 1953
 On the right is shown the habitat in which this species breed for the first time in Sweden. The nest was built some 8 feet up in the ivy growing on this plank fence—in a small urban garden—perhaps not exactly a typical site, though nests are sometimes built in holes in walls. Most sites are rather similar to those in which the



Hj. Wollin

WHITE-BILLED DIVER (*Gavia adamsii*): SWEDEN, 1954

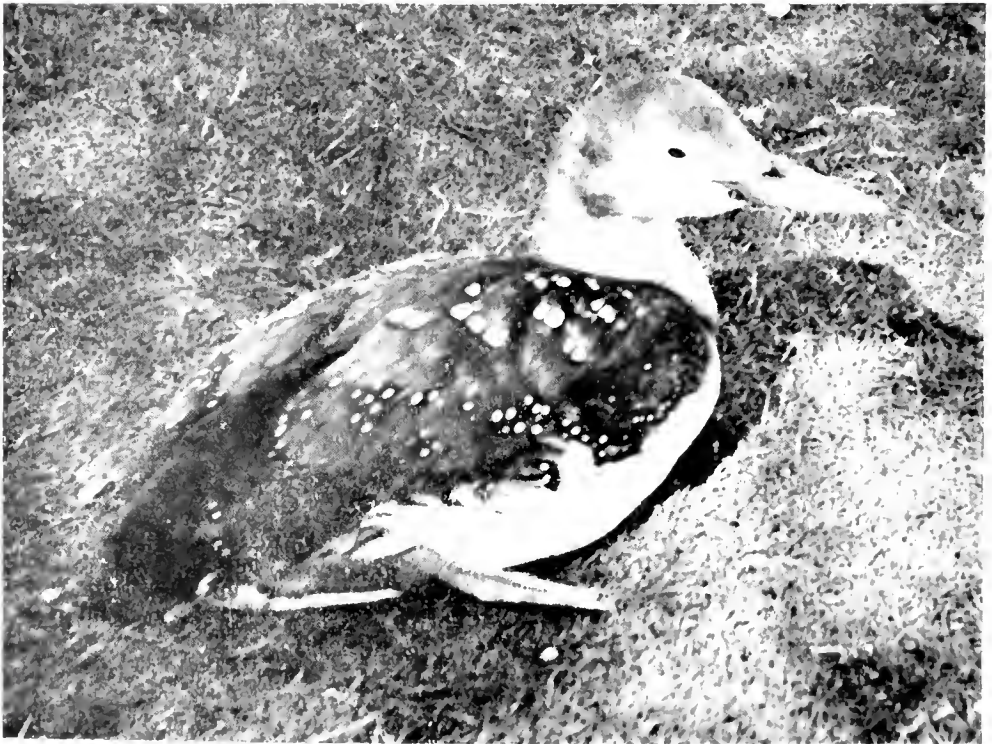
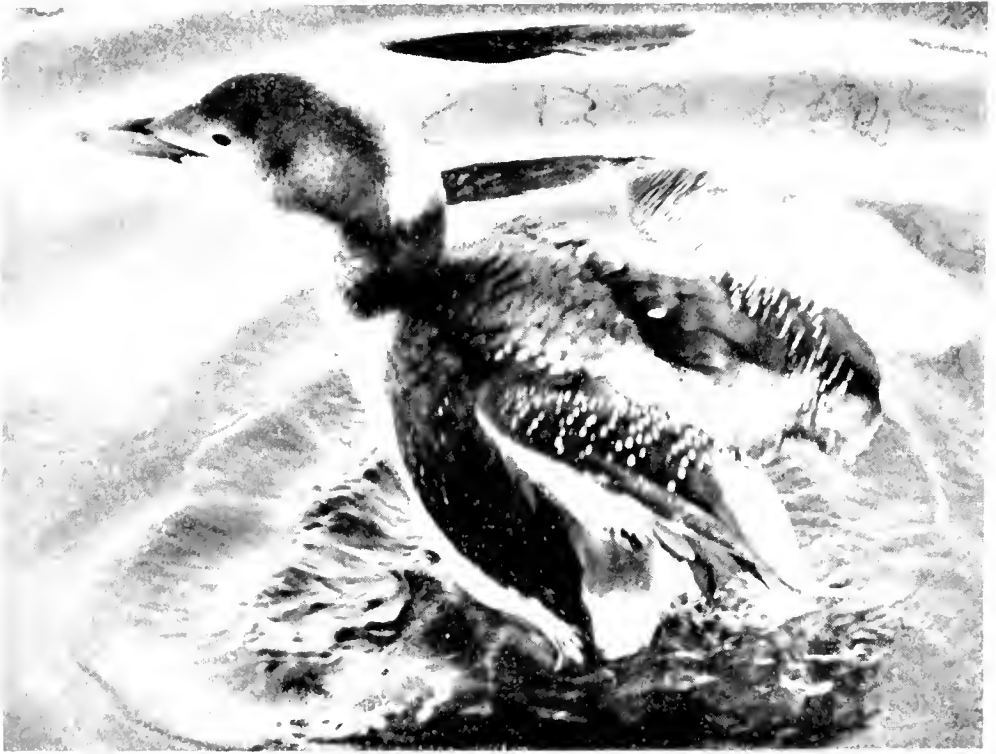
Captured on the Baltic ice in March, this bird was kept for three months in Trelleborg. Its bill was not quite typically uptilted, but the identification is proved not only by the beak-colour (including the dark tinge at the base), which is not absolutely reliable (see *Luk*, vol. 71, p. 203), but also by measurements.



John Schaefer

WHITE-BILLED DIVER (*Gavia adamsii*): SWEDEN, 1954

The same bird from above, showing well the length and thickness of the heavy bill and the light colour of its upper ridge (see page 501).



John Schaefer

White-bellied Diver (*Gavia adamsii*): SWEDEN, 1954

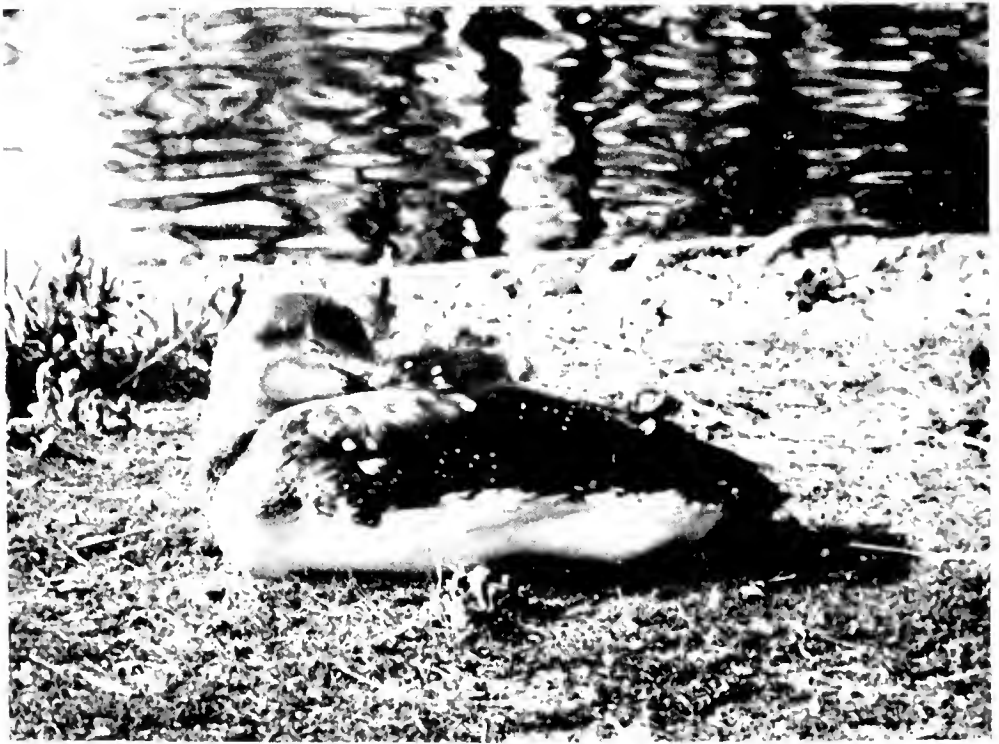
In the water the bird frequently raised itself to beat its wings, and a few rapid strokes lifted it so far that little more than the feet remained submerged (see page 509). When alarmed on land it used its feet to prop itself up; otherwise it lay relaxed, lightly on one side. The angle at which the lower picture was taken exaggerates the symmetrical appearance of the bill, giving it the shape of a Great Northern's (*G. immer*).



John Schaefer

WHITE-BILLED DIVER (*Gavia adamsii*): SWEDEN, 1954

On land the diver sometimes used a type of locomotion quite different from walking; it would alternately push itself up on its feet (*upper*) and fall forward; once (*lower*) it was seen to return to the water by this method, on the last push throwing itself in, breast first (see page 502).



John Schaefer

WHITE-BELLIED DIVER (*Gavia adamsii*): SWEDEN, 1951

Two further photographs of the bird on land, its body tilted a little to one side and, as was usually the case, the foot on the upper side stretched out (see page 503). The upper plate gives a better impression than most of these photographs of the almost straight upper mandible and the uptilted lower.

AN 4926	O	pull.	3.7.51	Chat Moss: 53°27'N. 2°28'W. (Lancs.) CBC.
	/?/		(24.6.54)	Glazebury (Lancs.) <i>Nr. where ringed.</i>

Short-eared Owl (*Asio flammeus*)

E 5896	O	pull.	3.5.53	<i>Nr.</i> Barr: 55°12'N. 4°42'W. (Ayrshire). GHH.
	×		16.8.54	Forkings, Muirkirk (Ayrshire) 30 m. N.E.

Nightjar (*Caprimulgus europæus*)

78022	O	pull.	28.6.53	Damerham: 50°57'N. 1°52'W. (Hants.) A&R.
	×		8.9.54	Nantes: 47°13'N. 1°32'W. (Loire Inf.) France.

Swift (*Apus apus*)

WW 936		ad.	24.7.49	Oxford: 51°45'N. 1°15'W. EGI.
	×	ca.	14.7.54	Oxford.
1. 9665		ad.	31.7.51	Ewhurst: 51°9'N. 0°26'W. (Surrey) LGW.
	×	ca.	24.6.54	Liphook (Hants.) 15 m. W.S.W.

Green Woodpecker (*Picus viridis*)

22286	O	pull.	26.6.54	Hainault: 51°37'N. 0°7'E. (Essex). LNHS.
	×		25.8.54	Nazeing (Essex) <i>ca</i> 10 m. N.N.W.

Swallow (*Hirundo rustica*)

B3 137		ad.M.	6.7.53	Fair Isle: 59°32'N. 1°37'W. (Shetland)
	v		1.7.54	Reay, Thurso (Caithness) <i>ca.</i> 100 m. S.W.
37895	O	pull.	23.7.53	<i>Nr.</i> Sedburgh: 54°19'N. 2°32'W. (Yorks.) SS.
	×		10.5.54	Benouville: 49°14'N. 0°17'W. (Calvados), France.
23446	O	pull.	18.6.53	Chartley: 52°51'N. 1°59'W. (Staffs.) AHJ.
	/?/		24.9.54	Casteljalouse: 44°19'N. 0°5'E. (Lot-et-Gne.), France.
ID 585		ad.	16.6.52	Oundle: 52°9'N. 0°28'W. (Northants.) OS.
	×		27.9.54	Bennigsen: 52°14'N. 9°39'E. (Hanover), Germany.
834491	O	pull.	24.7.54	Birchanger: 51°53'N. 0°11'E. (Essex). AD.
	×		3.10.54	Angers: 47°27'N. 0°33'W. (M-et-L.) France.
4K 410	O	pull.	5.8.52	Stanwell: 51°27'N. 0°29'W. (Middx.) B&T.
	×		23.4.54	Trowbridge (Wilts.) <i>ca.</i> 75 m. W.
22491	O	pull.	28.6.53	Uppingham: 52°35'N. 0°43'W. (Rutland). US.
	v		14.5.54	Market Overton, Oakham (Rutland) 10 m. N.
8489	O	pull.	4.8.53	Holm Hale: 52°38'N. 0°48'E. (Norfolk). RSB.
	()		30.6.54	Costessey, Norwich. 16 m. E.

Of birds re-trapped where ringed, two were first caught in 1949 (one as an adult), two were in 1952 and five in 1953.

House Martin (*Delichon urbica*)

B79359	O	pull.	7.7.54	Nr. Mundford: 52°31'N. 0°39'E. (Norfolk). LH.
	×		5.9.54	Hern Hill (Kent) 80 m. S.S.E.

Rook (*Corvus frugilegus*)

342114		ad.	5.11.53	Spurn: 53°35'N. 0°6'E. (Yorks.)
	×		ca. 12.2.54	Dordon, Nr. Tamworth (Staffs.) 100 m. S.W.

Jackdaw (*Corvus monedula*)

360059	O	pull.	11.6.53	Wytham: 51°47'N. 1°19'W. (Berks.) EGI.
	()		24.3.54	Ayot St. Lawrence (Herts.), 43 m. E.N.E.
363309		juv.	18.11.51	Oxford: 51°45'N. 1°15'W. EGI.
	+		11.5.54	Everton, Sandy (Beds.) 50 m. N.E.

Great Tit (*Parus major*)

KK 461		ad.	24.11.52	Nr. Hayes: 51°32'N. 0°26'W. (Mddx.) B&T.
	()		2.2.54	Nr. Le Touquet: 50°32'N. 1°36'E. France.
JX 396		f.g.	4.3.53	Sevenoaks: 51°16'N. 0°12'E. (Kent) LNHS.
	×		ca. 16.5.54	Lumbres: 50°40'N. 2°7'E. (P. de C. France.

One bird ringed as an adult in 1948 and two as "pulls" in 1949 were recovered near place of ringing in 1954.

Blue Tit (*Parus caeruleus*)

MF 009		f.g.	12.11.51	Cley: 52°58'N. 1°3'E. (Norfolk).
	×		ca. 24.3.54	Matlask, Norwich (Norfolk) 25 m. S.S.E.

Wren (*Troglodytes troglodytes*)

B49345		ad.	19.10.53	Monks' House, Seahouses: 55°35'N. 1°39'W. (Northumberland).
	×		4.4.54	Belford (North'd) 6 m. W.N.W.

Mistle Thrush (*Turdus viscivorus*)

X55357	O	pull.	8.6.53	Barr: 56°38'N. 5°53'W. (Ayrshire) GHH.
	×		ca. 27.3.54	Nr. Fleetwood (Lancs.) 110 m. S.S.E.

Fieldfare (*Turdus pilaris*)

260629		ad.	3.4.53	Cookham: 51°34'N. 0°42'W. (Berks.) JF.
	+		ca. 15.1.54	Nr. Sauzé-Vaussais: 46°8'N. 0°7'E. (Deux Sevres) France.

Song Thrush (*Turdus philomelos*)

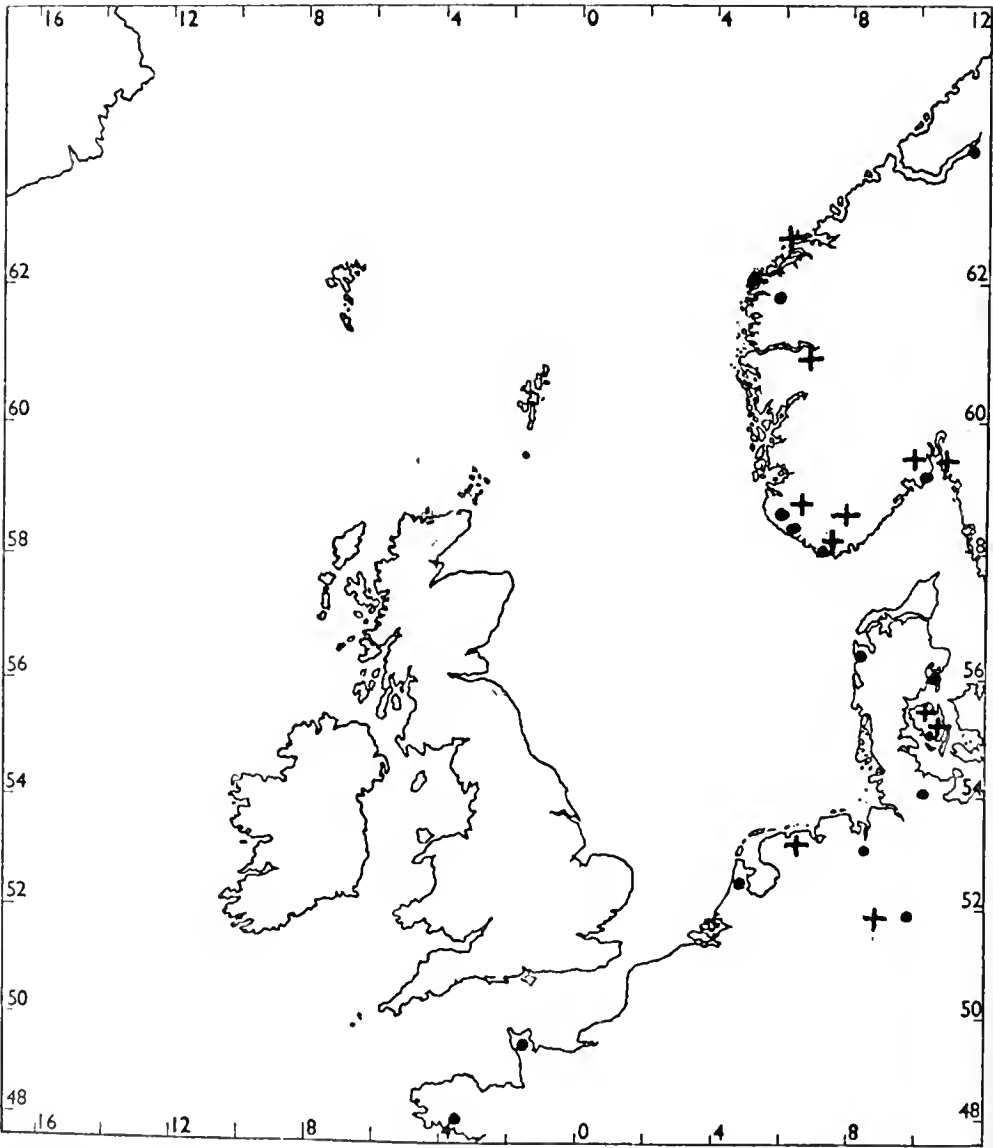
X30288		1st W.	20.10.54	Fair Isle: 59°32'N. 1°37'W. (Shetland).
	+		14.11.54	Andernos: 44°44'N. 1°7'W. (Gironde) France.
R 7757		1st W.	22.10.52	Fair Isle.
X25762		ad.	31.1.54	Nr. Bridport (Dorset) 600 m. S.
			7.8.53	Muthill: 56°19'N. 3°50'W. (Perths.) AC.
	/ ? /		1.12.54	Ballylongford: 52°33'N. 9°20'W. (Co Kerry) 350 m. S.W.
P 8412	O	pull.	30.4.53	Blagdon: 55°5'N. 1°39'W. Seaton Burn (North'd). A&R.
	×		10.2.54	Pembroke 280 m. S.S.W.

25331	O	pull.	30.5.53	S. Shields: 55°0'N. 1°25'W. (Co. Durham). FGG.
	v		6.2.54	Wexford, 275 m. S.W.
8527	O	pull.	17.4.52	Loweswater: 54°35'N. 3°21'W. (Cumb.) RS.
	×		6.2.54	Barrigone (Co. Limerick) 275 m. S.W.
23449		juv.	3.8.52	Ilkley: 53°56'N. 1°49'W. (Yorks.) WNS.
	×		9.1.54	Foxdale, St. John's (I.O.M.) 115 m. W.N.W.
FR 178		f.g.	3.10.52	Gibraltar Point: 53°6'N. 0°21'E. (Lincs.)
			8.2.54	Braga: 41°35'N. 8°26'W. Portugal.
AX 217		ad.	10.9.51	Gibraltar Point.
	×		0.7.54	Alsen: 50°0'N. 9°55'E. Denmark.
62002		f.g.	15.11.53	Salthouse: 52°57'N. 1°3'E. (Norfolk). CBO.
	×		4.2.54	Solihull (Warwicks.) 125 m. W.S.W.
55388	O	pull.	19.5.53	Wellesbourne: 52°12'N. 1°36'W. (Warwicks.) JAN.
	×		6.2.54	The Lizard (Cornwall) 215 m. S.W.
55384	O	pull.	1.5.53	Wellesbourne. JAN.
	×	ca.	10.5.54	Yelland Marsh, Nr. Instow (Devon) 130 m. S.W.
445725		ad.	22.9.53	Cholsey: 51°34'0°9'W. (Berks.) OOS.
	×	ca.	31.1.54	Tresahor Praze, Constantine (Cornwall) 200 m. S.W.
5841		juv.	3.6.51	Damerham: 50°57'N. 1°52'W. (Hants.) A&R.
	×	ca.	7.2.54	Heybrook Bay, Plymstock (Devon), ca. 110 m. W.S.W.
59067		ad.	11.9.53	Sway: 50°47'N. 1°37'W. (Hants.) EC.
	×		7.2.54	Saint Pabu: 48°10'N. 4°38'W. (Finistère) France.
Redwing (<i>Turdus musicus</i>)				
229381		1st W.	8.10.53	Fair Isle: 59°32'N. 1°37'W. (Shetland).
	×		29/30.3.54	North Sea: ca. 53°4'N. 4°40'E., Lightship "Texel".
5074		f.g.	26.10.49	Spurn: 53°35'N. 0°6'E. (Yorks.)
	/ ? /	ca.	21.2.54	Nr. Portlaw (Co. Waterford) 320 m. W.S.W.
RR 300		1st W.M.	1.11.52	Gibraltar Point: 53°6'N. 0°21'E. (Lincs.)
	×		13.2.54	Kyrenia: 35°20'N. 33°20'E. Cyprus.
Prior to this bird, Italy was the furthest east from which a Redwing had been recovered.				
8672		1st W.	25.10.53	Lundy Island: 51°12'N. 4°40'W. (Devon).
	()	ca.	22.12.54	Nr. Malmédy: 50°26'N. 6°2'E. (Liège) Belgium.
Ring Ouzel (<i>Turdus torquatus</i>)				
44785	O	pull.	27.5.53	Glen Feshie: 57°0'N. 3°54'W. (Inverness-shire). JKF.
	+		1.4.54	Lau Balagnas: 42°58'N. 0°0'W. (Hte. Pyrénées), France.
88998		ad.F.	19.10.53	Westleton: 52°16'N. 1°36'E (Suffolk). DBC.
	/ ? /		1.11.53	Nr. Cambon: ca. 43°40'N. 2°50'E. (Hérault), France.

RL 712	O	pull.	7.6.53	Carnethy Hill: 55°51'N. 3°17'W. Pentland Hills (Midlothian). LNHS
	×		0.12.53	Saldon, Nr. Teruel: 40°22'N. 1°6'W Spain.

Blackbird (*Turdus merula*)

X92155		f.g.M.	6.11.54	Spurn: 53°35'N. 0°6'E. (Yorks.) Wardenburg: 53°4'N. 8°12'E.
	×		10.11.54	Germany.
19895		1st W.M.	26.3.53	Spurn.
		ca.	26.10.54	Misvaer, Salt Fjord: 67°10'N. 15°0'E. Norway.



MAP 2—DISTRIBUTION OF RINGED BLACKBIRDS (*Turdus merula*) RECOVERED ABROAD IN 1954
Crosses indicate the positions of birds recovered between mid-April and the end of August; dots the remainder of the year.

X32081	×	ad.F.	6.12.53 ca. 7.4.54	Dungeness: 50°55'N. 0°59'E. (Kent). Nr. Strängnäs: 59°21'N. 17°2'E.
X62673	×	ad.F.	1.2.54 23.8.54	Sweden. Shoreham-by-Sea: 50°51'N. 0°16'W. (Sussex). JS. Folkabo: 58°07'N. 13°47'E.
29586		1st W.M.	22.10.53	Sweden. Fair Isle: 59°32'N. 1°37'W. (Shetland).
29650	×	ad.F.	ca. 15.1.54 2.11.53 20.2.54	Barna, Nr. Galway, 510 m. S.W. Fair Isle.
7202	×	f.g.M.	10.3.52 11.2.54	Nr. Nenagh (Co. Tipperary) 520 m. S.W. Fair Isle.
4063	×	f.g.F.	6.12.53	Nr. Oban (Argyll) 260 m. S.W.
22106	×	f.g.M.	(7.1.54) 6.11.54 ca. 16.11.54	Chickens Rock: 54°2'N. 4°51'W. (I.O.M.) CCM&P. Edenderry (Co. Offaly), 100 m. W.S.W. Spurn.
9852	×			Norden, Rochdale (Lancs.) 90 m. W.
Whinchat (<i>Saxicola rubetra</i>)				
		1st W.	27.8.53	Monks' House, Seahouses: 55°35'N. 1°39'W. (Northumberland).
	×		(20.11.54)	Nr. Loulé: 37°9'N. 7°59'W. (Algarve), Portugal.
Redstart (<i>Phoenicurus phoenicurus</i>)				
11632	O	pull.	12.6.53	Everingham: 53°53'N. 0°47'W. (Yorks.) JWL.
	×		16.9.54	Alcobendas: 40°34'N. 3°38'W. (Madrid), Spain.
66967	-	ad.M.	25.4.54	Sandwich: 51°17'N. 1°20'E. (Kent). EGP.
	×		10.6.54	Between Loch Ailort & Glenuig, (Inverness-shire) ca. 490 m. N.W.
Robin (<i>Erithacus rubecula</i>)				
8814	×	f.g.	19.10.53 ca. 7.3.54	Spurn: 53°35'N. 0°6'E. (Yorks.) Nr. St. Mammés: 48°22'N. 2°47'E. (S. et M.) France.
8811	×	f.g.	15.10.53 24.1.54	Gibraltar Point: 53°6'N. 0°21'E. (Lincs.) Nr. Bishops' Stortford (Herts.) 85 m. S.
5527	×	ad.	17.8.53 29.11.54	Dungeness: 50°55'N. 0°59'E. (Kent) Whitstable (Kent), 30 m. N.
Sedge Warbler (<i>Acrocephalus schoenobaenus</i>)				
494	×	f.g.	29.5.54 1.6.54	Isle of May: 56°11'N. 2°33'W. (Fife). Hawkshead, Ambleside (Westmorland), 130 m. S.
8834		juv.	16.8.53	Abberton: 51°50'N. 0°53'E. (Essex). CBW.
	/ ? /		2.10.54	Nr. Mirandella: 41°20'N. 7°13'W. (Tras os Montes), Portugal.
Garden Warbler (<i>Sylvia borin</i>)				
750	O	pull.	9.6.54	Margam: 51°34'N. 3°44'W. (Glam.) HCWN.
	×		19.8.54	Maindee, Newport (Mon.) 32 m. E.

Whitethroat (*Sylvia communis*)

KF 715	O	pull.	14.6.52	Kilrenny: 56°14'N. 2°41'W. (Fife). WJE.
	v		17.5.54	Isle of May (Fife), 7 m. S.E.
KE 812		juv.	6.7.52	Salthouse: 52°57'N. 1°3'E. (Norfolk) CBO.
	x		4.5.54	Cromer Lighthouse (Norfolk), ca. 9 m. E.
B70237		f.g.	13.9.54	Westleton: 52°16'N. 1°36'E. (Suffolk) DBC.
	x		23.9.54	Valenciennes: 50°21'N. 3°32'E. (Nord), France .
B39259		ad.	11.9.53	Abberton: 51°50'N. 0°53'E. (Essex). CBW.
	()		21.7.54	Sanlucar de Barrameda: 36°47'N. 6°19'W. (Cadiz), Spain .
B48032		f.g.	21.8.54	Dungeness: 50°55'N. 0°59'E. (Kent).
	[?]		7.9.54	Monforte: 42°31'N. 7°30'W. (Lugo), Spain .
LK 178		ad.	17.8.52	Dungeness.
	x		13.7.54	Lydd (Kent), ca. 4 m. N.W.

Willow Warbler (*Phylloscopus trochilus*)

JL 301		f.g.	3.9.50	Isle of May: 56°11'N. 2°33'W. (Fife)
	x		12.5.54	Thurso (Caithness) 170 m. N.N.W.
JL 317		ad.	4.5.54	Isle of May.
	x		(18.5.54)	Staveley, Chesterfield (Derbyshire), 21 m. S.S.E.
H 1888		f.g.	20.8.50	Spurn: 53°35'N. 0°6'E. (Yorks.)
	x	ca.	7.5.54	Carlisle (Cumberland) 150 m. N.W.
B43862		f.g.	15.8.54	Westleton: 52°16'N. 1°36'E. (Suffolk) DBC.
	()		1.9.54	Zamudio: 43°16'N. 2°56'W. (Vizcaya) Spain .
B48665		ad.	16.4.54	Saltee Is.: 52°7'N. 6°35'W. (Co. Wex ford).
	x	ca.	0.10.54	Celorigo da Beira: 40°39'N. 7°25'W. Portugal .
B59762		ad.	9.6.54	Cambridge: 52°12'N. 0°7'E. CBC.
	x		13.8.54	Westenhanger, Nr. Hythe (Kent), 85 m. S.E.
LH 733		ad.	14.5.53	Skokholm: 51°42'N. 5°16'W. (Pemb.
	v	ca.	24.5.54	North Sea: 55°28'N. 8°28'E. Off Esbjerg, Denmark .
NW 324		ad.	26.7.52	Lundy I.: 51°12'N. 4°40'W. (Devon).
	x		7.4.54	Izmoren: 35°7'N. 4°0'W. Spanish Morocco .
B47848		f.g.	5.9.54	Dungeness: 50°55'N. 0°59'E. (Kent).
	x		19.9.54	Lagrange: ca. 44°56'N. 0°35'W. (Gironde), France .

Spotted Flycatcher (*Muscicapa striata*)

JH 726		ad.	26.5.53	Dungeness: 50°55'N. 0°59'E. (Kent).
	x		24.6.54	Stornoway, Lewis, 580 m. N.W.

Pied Flycatcher (*Muscicapa hypoleuca*)

B70934		pull.	20.6.54	Mossdale, Ullswater: 54°35'N. 2°52'W. (Cumberland). FG.
	+		25.8.54	Usurbil: 43°21'N. 1°59'W. (Guipuz- coa), Spain .
ND 0170	()	pull.	17.6.51	Parkend: 51°46'N. 2°33'W. (Glos.) C&C.
	x	ca.	21.8.54	Lejona: 43°24'N. 2°58'W. (Vizcaya), Spain .

948	O	pull.	9.6.53	Parkend. C&C.
	/?/		ca. 15.9.54	Praia da Rocha: 37°9'N. 8°29'W. (Algarve), Portugal.

Four birds ringed in 1951, three in 1952 and one in 1953, as nestlings, were recovered near where ringed in 1954.

Meadow Pipit (*Anthus pratensis*)

9496	()	f.g.	9.9.54 13.12.54	Fair Isle: 59°32'N. 1°37'W. (Shetland) Nr. Jerez: 36°41'N. 6°7'W. (Cádiz), Spain.
7731	()	ad.	2/3.9.54	Tory I.: 55°16'N. 8°14'W. (Co. Donegal). PSR.
685	()	f.g.	10.10.54 18.9.53 5.2.54	Nr. Bilbao: 43°16'N. 2°56'W. Spain. Spurn: 53°35'N. 0°6'E. (Yorks.) Sao Teotónio: 37°29'N. 8°41'W. (Beja), Portugal.
383	O	pull.	30.5.53 () 3.10.53	Cley: 52°58'N. 1°3'E. (Norfolk). Bidart: 43°23'N. 1°39'W. (B. Pyrénées), France.
831	O	pull.	16.5.54 () 8.11.54	Cley. Faro: 37°2'N. 7°54'W. (Algarve), Portugal.
0490	O	pull.	23.5.51 + 21.10.53	Havergate Is.: 52°4'N. 1°33'E. Orford (Suffolk), HGB. Begadan: ca. 45°22'N. 0°50'W. (Gironde), France.

Pied Wagtail (*Motacilla alba yarrellii*)

014	()	juv.	30.9.51 ca. 6.4.54	Abberton: 51°50'N. 0°53'E. (Essex). CBW. Arazede: ca. 40°17'N. 8°39'W. (Coimbra) Portugal.
428	()	juv.	19.8.54 7.10.54	Abberton. CBW. Biarritz: 43°28'N. 1°33'W. (B. Pyrénées) France.
664	()	juv.	7.7.54 30.10.54	Abberton. CBW. Vila Real de Santo Antonio: 37°14'N. 7°23'W. (Algarve), Portugal.
881	/?/	ad.	2.10.53 0.1.54	Abberton. CBW. Port Lyautey: 34°17'N. 6°35'W. Morocco.
773	O	pull.	20.5.53 () 7.11.54	Edenhall: 54°41'N. 2°40'W. (Cumberland). WH. Nr. Port Louis: 47°43'N. 3°21'W. (Morbihan), France.
953	O	pull.	8.6.51 × 27.2.54	Seaton Burn: 55°3'N. 1°37'W. (North'd). A&R. Basing, Nr. Basingstoke (Hants.) 270 m. S.

White Wagtail (*Motacilla alba alba*)

428	()	1st W.M.	4.9.54 6.9.54	Fair Isle: 59°32'N. 1°37'W. (Shetland) Smith Bank, Moray Firth (Morayshire), ca. 110 m. S.W. (came aboard fishing boat).
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Grey Wagtail (*Motacilla cinerea*)

07	×	ad.M.	1.6.54 19.7.54	Fair Isle: 59°32'N. 1°37'W. (Shetland) Rousay (Orkney), ca. 55 m. S.W.
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Yellow Wagtail (*Motacilla flava flavissima*)

B73632	O	pull.	9.6.54	Nr. South Shields: 55°0'N. 1°25'W. (Co. Durham). FGG.
	()		2.9.54	Vieux Boucau: 43°47'N. 1°25'W. (Landes), France .
N 6766		juv.	11.9.51	High Royd, Halifax: 53°43'N. 1°51'W. (Yorks.) HSS.
	×		0.8.54	Ben Rhydding, Nr. Ilkley (Yorks.) 13 m. N.N.E.
B31843	O	pull.	5.8.53	Spettisbury: 50°49'N. 2°8'W. (Dorset) CS.
	()		ca. 20.9.54	Nr. Montemor Velho: 40°10'N. 8°40'W. (Douro), Portugal .

Red-backed Shrike (*Lanius collurio*)

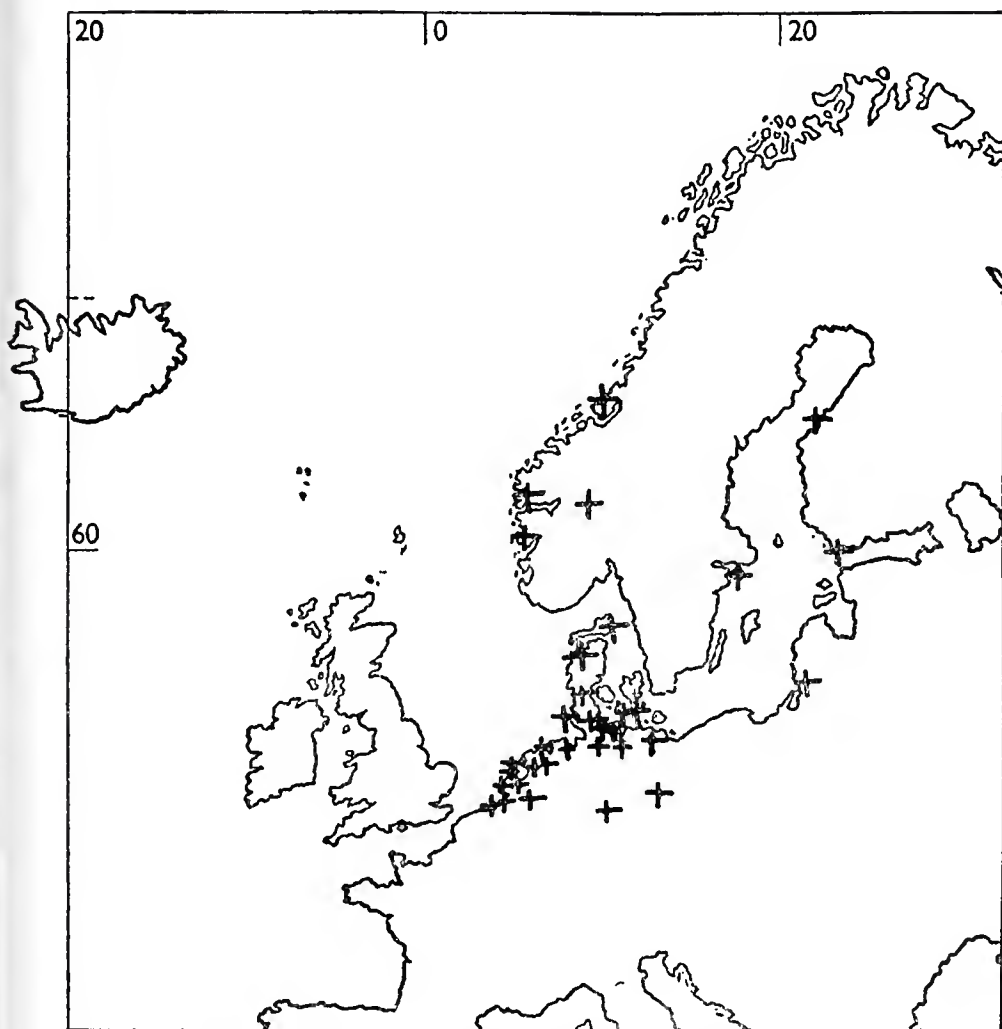
X84361		1st W.M.	28.8.54	Nr. Seahouses: 55°35'N. 1°39'W. (North'd.) MHBO.
	×		24.9.54	Marsala: 37°47'N. 12°25'E. Sicily .

Starling (*Sturnus vulgaris*)

RF 563	O	pull.	16.5.54	Nr. Sleaford: 52°59'N. 0°25'W. (Lincs.) AHS.
	+		9.7.54	Terwolde: 52°17'N. 6°6'E. (Gelderland) Holland .
X36830		f.g.	9.2.53	Blaby: 52°34'N. 1°9'W. (Leics.) L&F
	()		25.1.54	St. Romain la Virvee: ca. 44°58'N. 0°27'W. (Gironde), France .
X76449		1st W.	9.1.54	Monks' House, Seahouses: 55°35'N. 1°39'W. (Northumberland)
	()		1.6.54	Corringham, Gainsborough (Lincs.) 15 m. S.S.E.
X22337		ad.	31.1.53	Cleveleys: 53°53'N. 3°3'W. (Lancs.) RMB.
	+		28.6.54	White Colne, Colchester (Essex) ca. 210 m. S.E.
X62386		ad.F.	27.9.53	Leicester: 52°37'N. 1°7'W. L&R.
	×		18.8.54	Hengoed (Glam.) 110 m. S.W.
P 6538		ad.	3.3.52	Sandymount, Dublin: 53°20'N. 6°13'W. SMDA.
	×		27.7.54	Barton-on-Humber (Lincs.) 240 m. E.
PV 979		1st W.	7.9.53	Chilton: 51°34'N. 1°17'W. (Berks.) OOS.
	×		4.2.54	Hundleton (Pembroke) ca. 150 m. W.
V 4882		ad.	20.1.53	Brent Knoll: 51°16'N. 2°57'W. (Somerset). EGH.
	+		8.4.54	Fermoy (Co. Cork). 230 m. W.N.W.
P 8558		ad.	4.11.52	Taunton: 51°2'N. 3°7'W. (Somerset). JR.
	×		28.4.54	London, W.7. 130 m. E.N.E.
X48228		juv.	25.7.54	Dungeness: 50°55'N. 0°59'E. (Kent)
	×		ca. 25.11.54	Nr. Kingsbridge (S. Devon) 250 m. W.S.W.

In all 58 Starlings were recovered from the continent during 1954. Twenty of these (Holland 8, Belgium 6, Germany 4, Denmark 2, Sweden 1, France 3) were for dates suggestive of wintering or passage. The map indicates the position of all breeding-season recoveries.

The recovery abroad of a British nestling is very unusual, and the Gironde bird is the most southerly so far recorded. Of five birds ringed on passage at Smith's Knoll Light Vessel (52°43'N. 2°18'E.) between 17th October and 7th November 1953, 3 were recovered in Holland (11.3.54, 21.4.54 and 24.4.54), one in France (31.1.54) and one in Denmark (16.4.54).



MAP 3—DISTRIBUTION OF RINGED STARLINGS (*Sturnus vulgaris*) RECOVERED ABROAD DURING BREEDING-SEASON, 1954

Greenfinch (*Chloris chloris*)

	ad.M.	17.2.53	Monks' House, Seahouses: 55° 35' N. 1° 39' W. (Northumberland).
X		14.2.54	Rowlands Gill (Co. Durham) 44 m. S.
X	ad.M.	17.2.53	Monks' House.
X	ca.	15.4.54	Sedgwick, Nr. Kendal (Westmorland) ca. 100 m. S.W.
X	f.g.M.	9.2.53	Monks' House.
X	ca.	17.3.54	Aberdeen, 110 m. N.
X	ad.	24.2.54	Abberton: 51° 50' N. 0° 53' E. (Essex). CBW.
X		21.7.54	Faversham (Kent) 35 m. S.
X	ad.F.	7.3.54	Margaretting: 51° 42' N. 0° 25' E. (Essex). PVU.
X	ca.	8.8.54	Eythorne (Kent) 50 m. S.E.

Linnet (*Carduelis cannabina*)

B46740	O	pull.	6.6.54	Cley: 52°58'N. 1°3'E. (Norfolk)
	+		22.10.54	La Linea: 36°10'N. 5°19'W. (Cádiz)
				Spain.
B34788		juv.	29.7.53	Salthouse: 52°57'N. 1°3'E. (Norfolk)
	+		1.4.54	CBO.
				Souprosse: 43°48'N. 0°43'W. (Landes)
				France.
B35167		f.g.F.	29.11.53	Salthouse. CBO.
	+		10.11.54	Nr. Vincenza: 45°33'N. 11°34'E.
				(Veneto), Italy.

Chaffinch (*Fringilla caelebs*)

JE 127		ad.F.	13.2.53	Dublin: 53°21'N. 6°16'W. SMMA.
	×	ca.	30.4.54	Götene: 58°30'N. 13°30'E. Sweden.
K 2873		ad.	9.2.52	Monkstown: 53°17'N. 6°9'W. (Co. Dublin). JFS.
	()		16.4.54	Satervallen: 62°30'N. 13°35'E. (Järmland), Sweden.
MB 778		f.g.M.	3.10.51	Spurn: 53°35'N. 0°6'E. (Yorks.)
	()		10.10.54	Vosselaar: 51°18'N. 4°50'E. (Antwerp)
				Belgium.
J 5306		ad.F.	17.1.52	Fransley: 53°11'N. 2°36'W. (Cheshire) AWB.
	×		13.3.54	Slagelse: 55°24'N. 11°23'E. Denmark.
B35089		f.g.	11.11.53	Salthouse: 52°57'N. 1°3'E. (Norfolk)
	()		11.11.54	CBO.
				Deurne: 51°13'N. 4°26'E. (Antwerp)
				Belgium.
B35084		f.g.M.	11.11.53	Salthouse.
	v		31.10.54	Deurne, Belgium.
B39532		f.g.F.	10.2.54	Abberton: 51°50'N. 0°53'E. (Essex).
	()		14.10.54	CBW.
				Kieldrecht: 51°16'N. 4°11'E. (E. Flanders), Belgium.
JR 926		ad.M.	13.3.53	Romford: 51°35'N. 0°11'E. (Essex).
	×		3.2.54	RS.
				Saint-Mère-Eglise: 49°24'N. 1°19'W. (Manche) France.
JE 868		ad.M.	29.11.52	Upminster: 51°34'N. 0°15'E. (Essex)
	v	ca.	7.2.54	RS.
				Aulnoye, Nr. Maubeuge: 50°15'N. 3°50'E. France.

Brambling (*Fringilla montifringilla*)

B35216		f.g.F.	24.2.54	Salthouse: 52°57'N. 1°3'E. (Norfolk)
			26.10.54	CBO.
				Heist-op-den-Berg: 51°4'N. 4°44'E. (Antwerp), Belgium.
LN 252		f.g.	3.5.53	Isle of May: 56°11'N. 2°33'W. (Fife)
	×		12.11.54	Beveren-Waas: 51°13'N. 4°15'E. (Flanders), Belgium.

House Sparrow (*Passer domesticus*)

B20822		ad.F.	11.7.54	Monkstown: 53°17'N. 6°9'W. (Co. Dublin). RDJ.
	×		12.11.54	Enfield (Co. Kildare), ca. 25 m. W.
M 5826		ad.F.	2.1.51	Conisbrough: 53°29'N. 1°14'W. (Yorks.) AEP.
	×	ca.	7.2.54	Cudworth, Barnsley (Yorks.) 10 m. N.W.

PHOTOGRAPHIC STUDIES OF SOME LESS FAMILIAR BIRDS

LXVII. GREENISH WARBLER

Photographed by GÖSTA HAKANSSON

(Plates 58-60)

DURING the first forty years of this century, not one Greenish Warbler (*Phylloscopus trochiloides*) was recorded in Britain, and throughout this time the species' inclusion in the British List depended upon a single bird shot in Lincolnshire in 1896. In the last decade, however, there have been nine records, the most recent being one on Bardsey in 1954 and one each on Fair Isle and the Isle of May in 1955. This increase cannot, as in the case of some species, be attributed mainly to an increase in the number of observers, for this bird is not easy to separate in the field and, in fact, most of the British records are of ones trapped at the observatories in places where they formerly have been shot. Rather is this increase indicative of the Greenish Warbler's interesting spread to the north-west during the last twenty years.

The Greenish Warbler as a species has a vast range across east Europe and Asia from east of the Baltic and the Caucæus to the Pacific coast. Unlike most birds breeding in the western Palaearctic, however, it has solely a south-easterly migration and winters in India and Burma. It is not surprising, therefore, that in normal circumstances it should occur in Britain no more frequently than does the Arctic Warbler (*Ph. borealis*) which has similar wintering-quarters. At the moment, however, the Greenish Warbler is still pushing west into Scandinavia, continuing the spread that has been discussed in some detail by I. Valikangas (*Ornis Fenn.*, vol. xxxviii, pp. 25-39), who suggests that its causes are linked with the higher summer temperatures of recent years. Valikangas shows that the species was extending its range towards the north and north-west for some years before 1900 (the time of the Lincolnshire record) and that there was then a period of thirty years when there was no expansion, and even some withdrawal; this coincided with a period of lower summer temperatures in southern Scandinavia. With the temperatures increasing again, the spread developed quickly; the bird occurred in Denmark for the first time in June 1952 (*D.O.F.T.*, vol. 47, p. 103); in 1953 it bred in Sweden (*Fauna och Flora*, vol. 49, pp. 69-76); and to take one more example, in June 1954 there was a minor irruption of Greenish Warblers in the central Baltic, when 11 singing males and 2 probable females were observed at Gotska Sandön

(*Var Fagelvärld*, vol. 13, pp. 240-244). This spread is apparently not confined solely to the west, however, for in *The Birds of the Soviet Union* (vol. 6, pp. 177-186) E. S. Ptushenko records a comparable extension north and east in Asia.

It was at the Swedish breeding-site in 1953 that these photographs were taken by Mr. Gösta Hakansson. It will be noticed at once that in none of them can any suggestion be seen of the characteristic wingbar that is usually given as the best method of separating this species from the Chiffchaff (*Ph. collybita*). Mr. Hakansson tells us, in fact, that at very close range it could be seen that one of the pair had just the faintest indication of a bar; the other, none. This point is of interest as confirmation of H. G. Alexander's remark about this western race (*antea*, p. 294) that "as often as not, the wing-bar is scarcely visible, or totally invisible, in the field". Alexander has discussed the difficulty of identifying this species in the field, a feat which is dependent on the wing-bar being present and otherwise upon a combination of the pronounced yellowish-white eye-stripe, the dark legs, and the tendency to grey on the head and rump; but, as Alexander has also pointed out, the bird is a very variable one and certain field-identification is often only possible when it is singing. The song has been discussed in detail by C. F. Lundevall (*Fauna och Flora*, vol. 48, pp. 229-234), who describes it as resembling that of the Wren (*Troglodytes troglodytes*), but including sounds that recall a Treecreeper (*Certhia familiaris*) and Goldfinch (*Carduelis carduelis*).

The nest of the Greenish Warbler seems usually to be built near the ground in a site similar to that often used by the Chiffchaff, but not infrequently nests are built in crevices in trees and in holes in walls. Plate 60 (right) shows the Swedish breeding-site: the nest was placed about 8 feet from the ground in ivy growing against a plank fence in a small garden. The garden was fenced on all sides and was surrounded by houses on the west, but was close to the Botanical Gardens of Visby on the east.

I. J. F.-L.

A WHITE-BILLED DIVER IN CAPTIVITY

By JOHN SCHAEFER

(Plates 61-64)

ON 4th March 1954, after some weeks of extremely cold weather, a White-billed Diver (*Gavia adamsii*) was captured on the ice of the Baltic Sea at the southern extremity of the Scandinavian peninsula. For almost three months it was kept in a pond in the park of the town of Trelleborg, Sweden. It was moulting when captured and could not fly, and the moult remained retarded throughout its captivity so that even three months later the primaries were so small as to be useless. Escape would have been very unlikely in any event, since the pond did not provide more than about 80 feet of surface for a take-off. Permission to release the diver was refused till 31st May, and by that time its condition was so poor that it survived for only a day or two longer.

During the first weeks of captivity it looked very active and alert. It spent much time swimming about and diving. When swimming on the surface it frequently held its head submerged just beyond the eyes in the way divers look for prey under water. Later on it did this much less frequently and only for a few seconds at a time, possibly because of poor underwater visibility as the weather became warmer and the water more turbid. Diving was a quick forward and downward movement, smooth and noiseless. A few times, when a sudden dive could be observed at close range, a simultaneous upward thrust of both feet was clearly visible as the body disappeared. I expected to see gradual and partial submersion as well, but I never observed this.

Much of the day and presumably all night was spent on land. During the first three or four weeks the diver went ashore only on an island in the pond, and when lying there it appeared extremely alert. As long as its attention was not diverted to preening, it kept turning its head from side to side looking in a different direction every few seconds. The unnatural environment and the presence of man obviously provided a multiplicity of stimuli, but only an occasional one could be clearly identified, such as a passing aeroplane, or the more natural event of gulls or ducks flying over the pond, or the whistle of a locomotive in the yards near the park.

Most of these stimuli seemed to wear off with time. The diver then seemed much less alert, but the reaction to things flying over was among the ones that persisted. After about a month of captivity the excessive stimulation by the environment had ceased. From then on the diver rested anywhere on the shore, though never more than about 15 feet from water and usually less. For a few days at a time it preferred one place and then another. It

always lay on grass, except for a period of about a week when it regularly rested on some straw put out for the swans and not used much by them.

Every day much time was spent preening, both on land and in the water. When preening in the water the diver lay fully rotated to one side, sometimes rather more than 90 degrees. It floated about in a circle approximately ten feet in diameter, its underside toward the centre of this circle. One foot was making slight flapping movements in the air; presumably the underwater foot moved similarly, causing the forward motion. The lateral position was often maintained after preening had ceased, but the visible foot then no longer moved and the diver drifted on slowly, apparently without direction. Preening on water was never seen without this circular movement.

In the water the diver very frequently raised itself to beat its wings, and a few rapid strokes lifted it so far that little more than the feet remained submerged (see plate 62, upper). Resuming its horizontal position on the water it then rapidly flicked its tail from side to side so that the water splashed about. This wing-beating sequence was usually repeated several times. On land I saw wing-beating only during the first few weeks: here it caused the diver to stand almost erect, while in walking the body axis never rose more than 45 degrees from the ground, and at rest it invariably remained horizontal.

When the diver returned to the shore it swam to one of the places where it was used to landing, and remained there, its breast only a few inches from land, for some variable time, often several minutes, before suddenly climbing ashore. Sometimes it swam off again after a while instead of climbing up, and returned later to repeat this landing sequence and complete it.

Once on land it walked awkwardly and laboriously, balancing with raised wings, without change of speed or direction, until it very suddenly lay down—almost collapsed. It then remained in the same place for a long time, often for hours. Occasionally it raised itself slightly on its feet to change position without moving away, but only very rarely did it get up to walk to another place and lie down again.

There was also a type of locomotion quite different from walking. I saw the diver use this to return to the water early one morning: it alternately pushed itself up on its feet (plate 63, upper) and fell forward, and on the last such push threw itself breast first into the water (plate 63, lower). This was not much faster than its walk. I never saw it move rapidly on land.—A man who said he had once tried to catch it told me it had escaped with great speed, but he was unable to describe how it had done this. When we finally caught the diver to release it, it did not move quickly at all, but by that time it was in very poor condition.

When resting on land the diver lay turned slightly to one side (plates 64, upper and lower), as a boat lies tilted off its keel on a

beach. When alarmed and ready to get up it used its feet to prop itself up (plate 62, lower); otherwise it lay relaxed with the foot on the upper side stretched out on the ground and often with the wing on the lower side slightly abducted. During preening on land this lateral rotation was exaggerated with the help of the upper foot.

The diver was fed with dead herrings thrown into the water from a low bridge across an arm of the pond. It soon developed a habit of waiting near the bridge when it was hungry, sometimes within a few feet of people standing there. I have some evidence that it learned to associate a light-coloured rain-coat with food: after having been fed several times by a person wearing such a garment, it would when hungry approach the bridge at great speed as soon as anybody in a coat of that colour appeared on it.

Fish that were thrown in within reach of its bill were picked up with a lightning-quick movement. A fish that could not be reached before it sank was secured by diving, but the diver returned to the surface at once if not immediately successful in the dirty water, where vision must have been limited to very short distances. A continuous, or only very briefly interrupted, visual stimulus seems to be essential to pursuit, at least where the prey behaves in this unaccustomed way. This was also apparent when a fish had already sunk out of sight by the time the diver reached the spot where it had dropped: no dive was then attempted. Once a fish was grasped, it was quickly turned into the position for swallowing: head first, and lying on its side in the bill. As many as six large herrings could be swallowed in rapid succession, but fewer if they were given slowly. When no longer hungry the diver swam away towards the middle of the pond, ignoring further fish thrown in for it. It then beat its wings several times and started preening.

A White-billed Diver observed in Holland in January 1954 (J. Kist, *Limosa*, vol. 27, pp. 24-28) always subjected the fish it caught to some kind of chewing and squeezing action of the bill for several minutes before it swallowed them. Since dead herrings were not prepared for swallowing in this way, I assume that this behaviour is a response to active movements of the prey held in the bill and that it normally ceases with them. (I never clearly saw a live fish being taken, though the diver is said to have done so.) The bird in Holland, moreover, was taking flatfish, and it is also conceivable that these may require more preparation for swallowing than herrings. Like the herrings, the flatfish were swallowed head first and "with the flat side up"; after swallowing a fish, the bird in Holland also raised itself out of the water and beat its wings.

Visitors to the park occasionally brought fish for the diver, and finding it resting on land threw the fish at it where it lay. Even a dead fish on land was recognised as a fish, but the stimulus did not seem to be very strong. Presumably it varied with hunger, but it was hardly ever strong enough to make the diver get up. If a

fish came to lie within easy reach, the diver usually started stabbing at it with its bill open, and eventually it managed to pick it up and swallow it.

I heard only one kind of sound from the diver: I shall transcribe it "gwook"—very short, liquid but rather muffled and not at all loud, repeated at intervals of a few seconds. It was not heard very often. At first I heard it only when the diver was in the water, but later occasionally on land as well.

In its reactions to the other waterfowl in the pond (various European and exotic ducks, geese and swans) the diver was entirely passive. When swans came very close to it on the water, it disappeared by diving. On land it occasionally moved away from them, but usually it remained where it was; sometimes it retracted its head slightly with its bill pointed at the nearest intruder. This may have been no more than concentrated observation, but one may speculate that under natural conditions it may be the starting-point of defence, and function as a deterrent. On the island where the diver used to lie during the first few weeks it was often very close to the nest of an incubating Black Swan (*Chenopsis atratus*). When this swan extended its neck to hiss at the diver, there was no reaction at all. The diver never took notice of any birds other than the Mute Swans (*Cygnus olor*), and reacted to those only if they came very close.

When the weather became very warm, the diver did not try to avoid sunshine, though its opened mandibles showed that it was affected by the heat. It did not even seek shade when it was in the water, where locomotion was no noticeable effort, and when it accidentally drifted into a shadowy place, it made no attempt to stay there. This was not surprising in a species that is exposed to sunshine only in a treeless environment with little shadow, where heat is tempered by air moving in from large surfaces of cold water.

When we caught the diver to release it, it defended itself by seizing fingers in its bill and biting them with considerable strength, so that they could not easily be freed, though it was in very poor condition by then. It was emaciated and weak, the growth of its summer plumage had been hopelessly retarded, and there had been more and more alarming signs that it was getting wet in water. It had gradually become very inactive, spending little time in the water that now bore less and less resemblance to its natural element. There seemed to be hardly any hope of its survival, but what hope there was lay in a return to an environment more like its natural one.

We released it from a beach near Trelleborg. It swam straight out, pausing to beat its wings frequently and diving now and then, more active than it had been for weeks, as far out as I could see it. Three days later it was found dead on the beach a few miles farther west, and had then apparently been dead for a day or two.

SPECIAL REVIEW

By D. D. HARBER

THE BIRDS OF THE SOVIET UNION. Under the general editorship of G. P. DEMENTIEV and N. A. GLADKOV. (*State Publishers "Soviet Science"*, Moscow, 1951-54). 6 vols. (In Russian).

CONTENTS OF VOLUME 6 (1954; 792 pages) *

THIS volume, like the previous one, deals with the Passerines. Though it seems, on the whole, to have been more carefully compiled than volume 5, it resembles this latter in other respects. There is little evidence of recent study in the case of many of the birds dealt with and a surprising ignorance is shown with regard to the breeding habits and food of a number of them. On the other hand a few birds, considered to be economically important as destroyers of insect pests, are treated much more fully and have obviously been carefully studied in recent years.

The Laniidae are by G. P. Dementiev. The typical race of the Great Grey Shrike (*Lanius e. excubitor*) breeds in the central zone of the European part of the Soviet Union. The northern zone (as well as northern Scandinavia and north-west Siberia) is occupied by the race *melanopterus*. The Lesser Grey Shrike (*L. minor*) declined considerably in numbers in Turkmenia towards the end of the last century and is still scarce there. But it is generally common in the southern part of its range and is tending to increase there with the establishment of plantations for purposes of field protection. Land-molluscs are mentioned amongst its foods and it will attack small birds and rodents. It will hunt up to half a kilometre from its nest. There is no recent evidence of the breeding of the Woodchat Shrike (*L. senator*) in the Ukraine. The race *niloticus* breeds in small numbers in Transcaucasia.

The Waxwing (*Bombycilla g. garrulus*) is dealt with by E. P. Spangenberg. The limits of the breeding-area of this bird have not as yet been properly established in the Soviet Union. The statement of Sushkin (1914) about its breeding south of Lake Baikal and in the western Sayan Mountains appears to be accepted by the author. It is stated that very few data concerning the breeding habits of this bird are available for the Soviet Union.

The Muscicapidae are by K. N. Blagosklonov. The typical race of the Spotted Flycatcher (*Muscicapa s. striata*) breeds as far east as the Urals and perhaps the north of the Aral Sea. The race *neumanni* is found from Kurgan east to south Baikal and Dauria where it is very rare. The Brown Flycatcher (*M. latirostris*) is not given as breeding on Sakhalin as is stated in

* Discussions of the contents of volumes 1-5 appeared in previous issues on pages 221-224, 268-276, 313-319, 343-348, 404-410 and 447-453.

The Handbook. It is very common throughout its area, but data concerning its breeding are "fragmentary and incomplete. This is, apparently, to be explained by the fact that its nests are very difficult to find".

The information given about the Pied Flycatcher (*M. h. hypoleuca*) is very full and complete and it becomes apparent that there are special reasons for this. "Amongst the birds which defend forests from insect pests Pied Flycatchers occupy one of the first places. . . . In the central zone amongst the birds occupying artificial nesting-sites the Pied Flycatcher numerically occupies the second place, after the Starling, and the first place amongst forest birds." "The Pied Flycatcher was the first bird for which were elaborated the measures, carried out in 1952, for the acclimatization of insectivorous birds in the southern forest plantations." As a consequence of the economic importance attributed to this bird the author is able to tell us not only its normal incubation-period but also how this varies in different parts of the Soviet Union and with different temperatures. We are even given the average percentage of infertile eggs in certain localities. In contrast to this even the incubation-period of the Collared Flycatcher (*M. albicollis*) remains unknown. The southern limit of the breeding-area of the Red-breasted Flycatcher (*M. p. parva*) runs from the upper reaches of the Samara River through Kharkov to the Black Sea in Bessarabia. Apart from this the typical race also breeds in the Caucasus and in Transcaucasia. Its incubation- and fledging-periods remain unknown.

The Regulidae are by A. M. Sudilovskaya. The Goldcrests (*Regulus regulus*) breeding in the Caucasus belong to the typical race which also nests in western Siberia and Altai. But the breeding distribution of this bird is imperfectly known and there is little information on its breeding-habits relating to the U.S.S.R. The Firecrest (*R. i. ignicapillus*) is only found in the extreme west of the European part of the Soviet Union. It appears that past claims of breeding in the Caucasus were based upon wrong identification.

The Sylviidae as far as the genus *Sylvia* are by E. S. Ptushenko. It is possible that the Northern Willow Warbler (*Phylloscopus trochilus acredula*) breeds in the Caucasus, but this needs confirmation. The race *lorenzii* of the Chiffchaff (*Ph. collybita*) is common in parts of the Caucasus and in Transcaucasia, but its nest has only been found once, in 1885. The typical race of the Arctic Warbler (*Ph. b. borealis*) breeds from Scandinavia to the Chukotsk Peninsula and as far south as lat. 60° N. In eastern Siberia south of lat. 60° N. and on Sakhalin the race *hylebata* breeds. Kamchatka and some of the neighbouring islands are inhabited by the race *xanthodryas*, while the area of the race *examinandus* starts with the southern Kuriles and extends to most of Japan. Little is known about the breeding-habits of this species and the only information given concerning the food of the

typical race is dated 1871. The Greenish Warbler (*Ph. trochiloides*) has noticeably extended its breeding area to the west, north and east during the past century. The scanty information given about the food of the race *viridanus* is dated 1908 and 1911. Although the typical race of the Yellow-browed Warbler (*Ph. i. inornatus*) is "one of the commonest Siberian birds" very little seems to have been learned about its breeding-habits since the time of Seebohm and all that is said about its food is "there are no data".

It appears that only one nest of Radde's Bush Warbler (*Ph. schwarzi*) has ever been found and described (Shulpin, 1927). It contained five eggs, "white with pale rusty-yellowish spots and dots concentrated at the blunt ends". It is evident, therefore, that the eggs found by Smirnow and given doubtfully as belonging to this species in *The Handbook* were ascribed to it in error.

The Lanceolated Warbler (*Locustella lanceolata*) is stated to have been obtained during the breeding-season on the River Onega (the authority quoted is dated 1871), in the Kirov district at about lat. 60° N. and at about the same latitude in the Permian Urals. These three localities are given as definite breeding-areas on the map. But the main breeding-area extends from the northern part of the Kulunda steppe to the Far East. The food of this species is given as "insects and their larvae (Pavlov, 1948)". The typical race of Pallas's Grasshopper Warbler (*L. c. certhiola*) breeds in the upper basins of the Ob and the Yenesei. Nothing is known about its nest and eggs or about its food. The race *rubescens* breeds from the Yenesei to the Sea of Okhotsk. The nest and eggs of this form have been described (in 1891), but its food remains unknown. The race *minor* breeds in the basin of the Amur and in Ussuria and also in north-east China. The information given about its breeding dates from 1870 and a Chinese author (1938) quoted gives its food while on passage as "insects and vegetable substances". The race *centralasiae* breeds in Altai, near Zaisan and along the Irtysh. It also breeds in central Asia outside the U.S.S.R. Nothing is known of its food and breeding-habits.

The Great Reed Warbler (*Acrocephalus a. arundinaceus*) has been extending its breeding-range to the north and east during the present century. The Marsh Warbler (*A. palustris*) bred as far north as the north-west of the Leningrad district in 1944. It does not appear to breed in the area of the Aral Sea. It is a common bird and is even abundant in the south of its area. The Paddyfield Warbler (*A. a. agricola*) is numerous in the region of the lower Volga and around the lakes of Kazakhstan. But the only nests known to have been found are two in 1895, one in 1913 and one in 1947. No breeding details are known. Blyth's Reed Warbler (*A. dumetorum*), though rare in the northern part of its area, is very common in places in the Urals and is common enough in the central zone of the European part of the Soviet Union.

But there is very little known of its breeding habits and all that is known about its food is that this consists of insects. The Aquatic Warbler (*A. paludicola*) is rare almost everywhere and its numbers appear to have declined over the past 30 years.

The incubation-period of the Booted Warbler (*Hippolais c. caligata*) is from 13 to 14 days. The young remain in the nest about 13 days and leave it before they are able to fly, being fed by the parents near the nest for a further 13-14 days. All that is known about the food of this bird is that it eats insects. The Olivaceous Warbler (*Hippolais pallida elæica*) does not breed north of the Caucasus in the European part of the Soviet Union and so the reference to Perm in *The Handbook* is incorrect. This bird is double brooded.

With the Barred Warbler (*Sylvia nisoria*) I. B. Volchanetski takes over. Two sub-species, admittedly "poorly distinguishable", are accepted. The typical race occupies the area west of the Urals and the Caspian, while the rest of the range belongs to the race *merzbacheri*. While this species is single-brooded in the north, near Batum it raises two broods annually (Dombrovski, 1913). A good deal of information is given about the food of this bird which is considered useful to agriculture. Similar importance is attributed to the Garden Warbler (*S. borin*). Establishing themselves in the strips of woodland planted for purposes of field protection, these birds "form a natural barrier against the spread and reproduction of pests". *The Handbook* recognizes no subspecies of the Garden Warbler, but here *S. b. pallida* is given as occupying the Asiatic part of the area of this species. The Blackcap (*S. atricapilla*) is also considered a very useful bird and it is recommended that fruit-and berry-bearing shrubs and trees should be specially included in the protective strips of woodland planted in the dry regions of the south for the benefit of this and similar species. The Whitethroat (*S. communis*) is one of the commonest birds of the Soviet Union. The typical race extends only about as far east as the Urals. Beyond these is found the race *rubicola*, while the race *icterops* inhabits the Caucasus and Turkmenia. This is another species which is considered very important economically and almost two complete pages are devoted to an account of its food. (The food of many warblers is disposed of in one or two lines.) A few species of warbler are dealt with by A. K. Rustamov.

The Turdidae are by N. A. Gladkov. The area of White's Thrush (*Turdus dauma aureus*) is insufficiently known, but it appears to extend as far west as the Pechora. It is probably single-brooded (Ivanov, 1952). The Siberian Thrush (*T. sibiricus*) is a "rare bird" and its area is insufficiently known. It is very rarely seen on passage and the known records of this relate almost exclusively to Transbaikalia. Little is known about its breeding-habits and the authorities quoted on its food are dated 1911. If sufficient food is available, Fieldfares (*T. pilaris*) winter as far

north as Leningrad in the European part of the Soviet Union and as far north as Krasnoyarsk in the Asiatic part. Three races of this bird are recognised though it is stated that further confirmation of their validity is desirable. The Dusky Thrush (*T. eunomus*) is regarded as a race of Naumann's Thrush (*T. naumanni*). Very little is known about its breeding-habits and only three nests are described. The height of one of these from the ground is not given, but the others are stated to have been 3 to 4 metres up and at the height of a man respectively. Its food during the breeding-season has not been studied, but it is known to eat berries on migration. The Blackbird (*T. merula*) apparently nests only in town-gardens in the Baltic region. Its status in the woods and gardens of the steppe regions seems uncertain. Somov (1897) states that it appears there only on passage and rarely then. But Averin (1910 and 1911) gives it as a not uncommon breeder in such localities. The race *aterrimus* is rejected.

All the Wheatears (*Ænanthe ænanthe*) breeding in the Soviet Union are considered to belong to the typical form. Only in the extreme south does this bird arrive in March. Otherwise it comes in April and as late as early June in the north. The Pied Wheatear (*Æ. leucomela*) is treated as a race of the Black-eared Wheatear (*Æ. hispanica*) and the typical race of the former is named *Æ. h. pleschanka*. The Eastern Black-eared Wheatear (*Æ. hispanica melanoleuca*) breeds in the U.S.S.R. only in east and south-east Transcaucasia, northern Mangyshlak and part of the Ust Yurt, not in the Crimea as stated in *The Handbook*. It appears that only the female Isabelline Wheatear (*Æ. isabellina*) incubates. The incubation-period is 15 days and the young leave the nest before they can fly, being fed by both parents. It appears to be double-brooded in the lowlands. There is "almost no information" about the food of this bird.

The Red-flanked Bluetail (*Tarsiger cyanurus*) was proved to nest as far west as the Kola Peninsula in 1937. Near Archangel it has been met with in increasing numbers since 1938 and breeding has been repeatedly proved there. But the area where its general breeding takes place begins only with the middle Pechora and extends across the Siberian forests, reaching lat. 62° 30' N. on the Ob, lat. 64° N. on the Taz and lat. 67° N. on the Yenesei. Further east the northern limit is not clear. It breeds on Kamchatka and has been seen in the breeding-season on the Commander Islands. The race *ussuriensis* is rejected. It is a common bird of the taiga. Numbers on the Pechora vary. There were very few there in 1945 but many in 1947, the year in which one occurred on Whalsay, Shetland. Its food has been little studied. In the stomachs of eleven birds from the Pechora were found mainly beetles and their larvae, and caterpillars. In one stomach was a spider. On autumn migration in the Far East they feed on the berries of the wayfaring tree.

The typical race of the Redstart (*Phoenicurus p. phoenicurus*) does not nest in Turkestan as stated in *The Handbook*, though the race *samamisicus* breeds in the south there. The typical race is stated "very frequently" to nest on buildings. Though the present volume appeared in 1954 the latest information which it has on the breeding of the Black Redstart (*Ph. ochrurus gibraltariensis*) in Britain is that given in *The Handbook* (1938). The Red-spotted Bluethroat (*Luscinia s. svecica*) breeds across northern Siberia to the Chukotsk Peninsula and also in the mountains of central Asia and on Altai, though more information is needed about its distribution in the former locality. Its breeding on Kamehatka is doubtful. The White-spotted Bluethroat (*L. s. cyanecula*) breeds in the Danube delta (Voinstvenski, 1953). The race *tataricus* of the Robin (*Erithacus rubecula*) is rejected.

The Prunellidae are by R. N. Meklenburtsev, but nothing of special interest arises here. The Troglodytidae and Cinelidae are by A. M. Sudilovskaya. The Wren (*Troglodytes troglodytes*) is found in winter over much of its breeding-area though in considerably lesser numbers and not always annually. It is not clear whether these are local birds or whether they have come from more northern regions. The distribution of the Black-bellied Dipper (*Cinclus c. cinclus*) in the U.S.S.R. is very imperfectly known and its status in central European Russia is not clear.

The Hirundinidae are by R. N. Meklenburtsev. Throughout almost the whole of the European part of the Soviet Union the House Martin (*Delichon urbica*) nests only on buildings. Only in the Baltic region is cliff-nesting reported. But in the south and east of its area, cliff-nesting occurs frequently.

THE MAPS

It has been suggested that an explanation of the signs used on the distribution-maps would be of use to readers without a knowledge of Russian who might wish to consult these. The maps in most of the volumes are quite easy to follow. The breeding-area is enclosed by a black line. In cases of uncertainty a dotted line is used. The winter-area is shaded. It should be noted, however, that this last is quite often omitted. A cross denotes the occurrence of a vagrant or vagrants. If several races are involved the scientific names of these are given under the map, each with a number and these numbers then appear in the appropriate parts of the breeding-area.

In volume 4, however, the maps are made more complicated. In addition to the above signs the following are used. Areas covered with small dots are those where the greatest concentrations of breeding birds occur. A small white circle usually signifies that the species is constantly met with in summer in this locality and nests there sporadically. A small circle, half black and half white, marks an isolated breeding-colony. An area enclosed by a thick, black line is one where moulting birds congregate. A small triangle

shows where birds have been found in spring to the north of the breeding-area. Unfortunately, however, different writers use some of these signs with rather different meanings at times. Thus the last mentioned sign is sometimes used to show localities where birds have been found in spring outside the breeding-area and a small white circle sometimes means "places where the bird is constantly met with in summer (nesting not proved)".

A final word of caution on using the maps; as has been already shown above they by no means always agree with the information given in the text which is commonly more correct.

NOTES

Gull-billed Terns in Sussex.—On 29th May 1955, I saw two Gull-billed Terns (*Gelochelidon nilotica*) flying slowly eastward together just off shore at Langney Point, Sussex. I was able to note the short, thick and completely black bills, the stocky shape and the heavy flight together with the general superficial resemblance to the Sandwich Tern (*Sterna sandvicensis*). These birds gave the characteristic call of the species, distinct from and less rasping than that of the Sandwich Tern. On 29th July 1955, I saw three Gull-billed Terns flying eastwards together at the same locality. Like the previous birds these passed not far from the edge of the sea and I was able to observe the same features except that in this case no call was heard. All the above birds appeared to be in full adult plumage. This species has now been recorded on the Sussex coast every year since 1950 except for 1954 (*vide antea*, vol. xlv, pp. 262-263 and 371-372, *Sussex Bird Report*, 1953, p. 23), about 17 birds being involved, more than the total previously recorded for the county. It therefore seems possible that a few may occur there annually. This is an easy bird to overlook owing to its resemblance to the Sandwich Tern. Moreover, even to-day few observers pay much attention to the Sussex coast during June and July, the months when most of the above birds have been recorded. It is not long since even the Sandwich Tern and the Kittiwake (*Rissa tridactyla*) were virtually unknown in Sussex during these months though their regularity is now established, while similar regularity in very small numbers is now being shown for the Roseate Tern (*S. dougallii*), once considered to be one of our greatest rarities.

D. D. HARBER

Gull-billed Tern in Kent.—At 18.00 hours on 13th August 1955, two terns flying together at ca. 15 ft., west across Dungeness promontory, Kent, attracted my attention by the dissimilar tones of their excited flight calls. The leading bird was clearly a Sandwich Tern (*Sterna sandvicensis*). The second, whose voice was a much lower-pitched "kerr-waahk, kerr-waahk", had the short, thick, black bill and noticeably less-forked tail of a Gull-billed Tern (*Gelochelidon nilotica*). The birds were flying fast, with the same

wing action, through light rain; I could not see the tops of their heads, but a rearward view disclosed *G. nilotica* to be dark grey on the nape and at least on the back of the crown. H. E. AXELL

Gull-billed Tern in Sussex.—At about 19.30 hours B.S.T., on 15th August 1955, while walking along the sea-wall at the Midrips, near Camber, Sussex, I watched two parties of 5 and 4 Sandwich Terns (*Sterna sandvicensis*) flying in an easterly direction within two or three minutes of each other. Trailing behind the first of these parties was another bird that, from its shorter-bodied appearance, the stoutness of its bill and its slower flight, seemed probably to be a Gull-billed Tern (*Gelochelidon nilotica*). About a quarter of an hour later what may have been the same bird came back and circled over one of the pools for perhaps a minute, during which time it at least twice caught large insects, one of them probably a dragonfly. It was now calling repeatedly and this characteristic note, with the bird's shorter tail-streamers and its totally black, heavy, stubby bill confirmed it as a Gull-billed Tern. It was an adult. Eventually the bird moved off towards the west.

I. J. FERGUSON-LEES

Cuckoo in Pembrokeshire in December.—On 22nd December 1954 I heard a male Cuckoo (*Cuculus canorus*) calling near Little Milford, Haverfordwest, Pembrokeshire. I was so amazed that I thought I must have been mistaken, or that someone was producing a very clever imitation. Afterwards I learnt from five different people that it had been heard calling on and off for some hours that day and on the previous one, the 21st. One of these people, Mrs. J. Roch, saw it fly from the wood where I had heard it, to another wood, calling as it went. It passed within 100 yards of her.

J. D. HARCOURT ROBERTS

[Mrs. J. Roch has also kindly sent us details of what she saw and heard, and we are satisfied that there is no possibility of any mistake having been made. The only previous December record seems to be of the one shot by G. F. Gee on 26th December 1897 or 1898 on Primrose Hill, Delamere, Cheshire (see *antea*, vol. x, p. 227; and vol. xv, p. 243), but the February record given below appears to be quite unprecedented.—EDS.]

Cuckoo in Surrey in February.—At approximately 8.30 a.m. on 20th February 1953, a Cuckoo (*Cuculus canorus*) flew past my window at Farnham, Surrey, and as it did so was good enough to call, thus drawing attention to itself. If I had not actually seen the bird and had only heard it, I should probably have put it down to the local errand-boy.

JOHN BUCHAN-HEPBURN

Short-toed Lark at Fair Isle.—Among a number of Skylarks (*Alauda arvensis*) feeding on a small area of plough at Busta, Fair Isle, on 4th May, 1955, there was a smaller and very much redder

bird which I identified as a Short-toed Lark (*Calandrella brachydactyla*). Compared with the Skylarks its under-parts were a creamy-white, entirely unstreaked, though suffused buffish on the breast; and the two blackish marks on the sides of the neck which are characteristic of the smaller species were noticeable. There was also a small but nevertheless pronounced tuft or crest to the rear of the rufous crown, a buffish-white superciliary stripe, narrow pale wing-bars formed by buffish tips to the greater and median coverts, and buffish-white outer tail-feathers. The Skylarks were almost imperceptible against the background of grey-brown soil until they moved, but this bird was very conspicuous, and I can fully endorse P. J. Conder's impression of a small, reddish-brown lark rather than a "pale, sandy-looking" one as described in *The Handbook* (cf. *antea*, vol. xlvi, p. 190), though it must be admitted that in coloration this is a very variable species.

Although similar in build, plumage-pattern and behaviour (but with a more marked "crest" and neck-spots) to the Short-toed Larks I watched at Fair Isle in October 1952 (*antea*, vol. xlvi, p. 210) and October 1954 (*antea*, p. 457), the present example was very different in colour, and the reddish-brown upper-parts indicate that it belonged to the group inhabiting the Mediterranean basin (*brachydactyla*, *rubiginosa*, *hermonensis*), and not to the eastern population *longipennis*, a grey-brown bird which is the more usual form at Fair Isle in autumn. There are spring records of *brachydactyla* at Fair Isle for 18th June 1908 and 10th May 1930. The bird was also seen by Miss V. M. Thom, Mr. William Crawford and Mr. Ivor McLean.

KENNETH WILLIAMSON

Red-throated Pipit, Short-toed Lark, and other notable occurrences at Great Saltee.—The following occurrences took place on the Great Saltee, Co. Wexford, in spring 1955.

RED-THROATED PIPIT (*Anthus cervinus*).—On 2nd May one was identified by B. H. Harley, F. King and R. G. Wheeler. The most noticeable feature was the reddish-buff on the throat, chin and sides of head. The bird was rather confiding and was watched for over an hour during which the detailed description was made. This is the first authentic record of the species in Ireland.

SHORT-TOED LARK (*Calandrella brachydactyla*).—One on 10th May was watched for long periods by F. King, P. J. Roche, and R. F. R. The following were the salient features noted in the field. In flight the warm brown upper-parts contrasted strongly with the "off-white" and unmarked under-parts. When the bird was on the ground, a warm buff area on the upper-breast was noticeable; upper-parts streaked rich brown and warm buff; rump unstreaked. On three occasions a dark mark on the side of the upper-breast was clearly seen when the bird turned its head away, but this was by no means always noticeable.

Detailed field descriptions of the above two species are recorded

in the Observatory "Field Record Book", and have been submitted to the Editors of *British Birds*.

WOOD SANDPIPER (*Tringa glareola*).—The first to be recorded in Ireland in spring was seen on 13th May. It remained until the 15th, affording excellent views as it was very confiding. The white rump and feet extending beyond the tail were at once noticeable in flight. When on the ground the barred outer tail-feathers were well seen. The under-side of the wing was light grey. The bird was also observed by F. King and P. J. Roche. It seemed as contented feeding amongst sea-pink on the cliff top or in dry fields as by casual water.

NIGHTINGALE (*Luscinia megarhynchos*).—One was identified on 13th May by P. J. R. and was later seen by F.K. and R.F.R. One was trapped on 24th May and retrapped on the 25th and 26th.

WOODCHAT SHRIKE (*Lanius senator*).—An adult male was trapped on 13th May. Another Woodchat Shrike was present from 17th to 19th May; there was one on the 26th and possibly the same bird from the 28th to the 30th. ROBERT F. RUTLEDGE

Aquatic Warbler in Middlesex.—On 29th July 1955 at Perry Oaks Sewage Farm, Middlesex, we observed an Aquatic Warbler (*Acrocephalus paludicola*). It was feeding in a thicket of *Artemisia* and *Heracleum* by the river, and we obtained good views of it in a bright light at a little over ten yards as it moved about among the *Heracleum* umbels. It resembled a very buff-coloured Sedge Warbler (*A. schænobæus*), being buffier than the sometimes deceptively coloured juveniles of that species. The features observed were a bright buff medial stripe on the crown, a buff superciliary stripe topped by a heavy black stripe; a fainter dark line through the eye and dark markings on the ear-coverts. It was heavily streaked above, the black of the pale-edged secondaries and of the shoulder being especially noticeable. The under-parts were principally yellowish-buff (the colour of the throat was not observed), with thin sparse dark striations on the upper breast. The legs appeared to L.J.R. to be greenish. A churring note, fainter and less harsh than that of the Sedge Warbler, was presumed to come from the bird. After about a minute we lost it in dense cover. M.F.M.M. knows the species abroad.

M. F. M. MEIKLEJOHN and L. J. Reed

Aquatic Warbler in Kent.—An Aquatic Warbler (*Acrocephalus paludicola*) was trapped at Dungeness Bird Observatory, Kent, at 08.00 hours on 15th August 1955, together with a mixed bag of small Passerines which also included an adult Sedge Warbler (*Acrocephalus schænobæus*). The buff crown-streak and prominent dark streaking of the upper-parts were noted when the bird was first seen in the catching-box. Later, this bird and the Sedge Warbler were placed in the five-yard long funnel end of a Heli-

goland trap where, amongst grasses and open branches, they provided a useful opportunity to compare the two species in the "field". As they perched and flew about in this compartment, the birds were separable with the naked eye at 3-4 yards but with 8x binoculars began to be difficult at ranges above 12 yards. Apart from myself, some six people including I. J. Ferguson-Lees watched the Aquatic Warbler. It was photographed in the hand by F. J. Holroyd.

The full description taken included crown with central streak pale creamy-buff, broadening on to the forehead; mantle, scapulars and rump with very prominent blackish streaks; tail-feathers much more pointed than in Sedge Warbler; breast and flanks with a few black hair streaks; legs and feet creamy flesh. Wing 58 mm. (chord of 3rd primary), the notch on the inner web of the 2nd primary equal to the tip of the 7th. Weight 10.45 gms.

H. E. AXELL

Sardinian Warbler on Lundy.—An adult male Sardinian Warbler (*Sylvia melanocephala*) was trapped on Lundy at 0905 hours G.M.T. on 10th May 1955. After being examined, measured and photographed, it was shown to F. W. Gade and then released about mid-day. It was not seen again.

The forehead, crown, lores, and ear-coverts were glossy black, the remainder of the upper-parts sooty-grey, with a brown tinge on the upper tail-coverts. The tail was blackish-brown except for the tip and outer web of the outside feather on each side, which were off-white. The primaries, secondaries, and wing-coverts were blackish-brown; chin and throat, white; breast and belly, greyish-white; flanks, dove-grey; under tail-coverts, grey. The mandibles were black, except for the base of the lower which was pale horn. Legs were light-brown, and the light-brown iris was surrounded by an orange-red orbital ring. Its weight when captured was 10.6 gm. Soon after it was released it disappeared into thick cover, but during the brief time we had it in view its movements were reminiscent of a Dartford Warbler (*S. undata*), the tail being held upright at an angle to the body.

BARBARA WHITAKER

[This appears to be only the second British record of this Mediterranean species. Full measurements and details of the wing-formula were taken, and these figures have been sent to us, together with photographs which clearly show the white in the tail and the area of black on the head.—EDS.]

Little Bunting in Lincolnshire.—On 2nd October 1954, on Cowbit Wash, about two miles south of Spalding, Lincolnshire, I saw a large flock of finches feeding in a field where mustard had been grown and recently harvested. As I approached, the flock rose and flew a short distance before settling in some hawthorn and willow bushes. Most of the birds were Greenfinches (*Chloris*

chloris), but among them I noticed a small bunting. It had chestnut crown and ear-coverts, both with black edgings, and fine black striations on the flanks. It had a thin, black moustachial streak; the throat, mid-breast, belly and outer tail-coverts were all white. The upper-parts were dark brown, with black patches on the wings. The feet were "milk chocolate". The bird was about the same size as Linnets (*Carduelis cannabina*) which were also present, but it appeared to be slimmer. It uttered a repetitive low twitter whilst on the branch, and seemed to be feeding on insects round the base of the leaves. In all it was under observation for ten minutes, and the views I had were such that I was left in no doubt that it was a male Little Bunting (*Emberiza pusilla*) in adult plumage.

J. REDSHAW

LETTERS

THE "DUNGENESS" RINGING-PLIERS

SIRS,—Although the Bird-Ringing Committee welcomes the "Dungeness" ringing-pliers as a valuable aid to better ringing, there are two dangers concerning their use which were not mentioned by Mr. H. E. Axell in his explanatory note (*antea*, p. 229).

Firstly, on many species which take size 1 ring it is dangerous to "close the pliers right home", particularly on nestlings. The ring must move freely up and down, as well as round, the tarsus, and the amount of overlap varies according to the species. Once the present harder quality size 1 and 1A rings have been closed too tightly it is very difficult to remove them without grave injury to the bird.

Secondly, size 1 and 1A rings given the full curvature of the shaping device may be too small for use on the larger birds. If the ring is thus bent, too acutely, the inner end is likely to cut into the tarsus when the remainder of the ring is closed round it.

It may be added that when a new series of ring sizes is introduced, in about two years' time, the present "Dungeness" pliers may be unsuitable for certain sizes not corresponding exactly with those now in use.

ROBERT SPENCER,

Secretary, Bird-Ringing Committee

SIGHT RECOVERIES OF MARKED SWALLOWS

SIRS,—About 90 juvenile Swallows (*Hirundo rustica*) were marked with daubs of yellow or white on the back, and deep blue on the belly, between 22nd August and the end of September 1955. I should be grateful if anyone who has seen one of these birds would write to me at 2 Sunnyside Cottages, High Street, Harlington, Hayes, Middlesex.

H. A. BILBY



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Left—YELLOW-HEADED WAGTAIL (*Motacilla cinerea*), FEMALE AND MALE
(Fair Isle, September–October 1951, see *antea* pp. 26–29)

Right—SIBERIAN THRUSH (*Turdus sibiricus*), MALE
(Isle of May, 1st–4th October 1951, see *antea* pp. 21–28)

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BRITISH BIRDS

BIRDS AND NATURE RESERVES IN GREAT BRITAIN

ORNITHOLOGISTS were among the first to organize series of sanctuaries or refuges for the preservation and study of wild life, and the Royal Society for the Protection of Birds was a pioneer in wardening the haunts of rare species. A number of active local bodies, starting with the Norfolk Naturalists' Trust, took up the work in certain counties, and the State set aside as bird sanctuaries certain areas in the Royal Parks. The need for supplementing such efforts on a large scale and for developing a comprehensive series of nature reserves was officially recognized in the creation by Royal Charter in 1949 of the Nature Conservancy, operating under the Privy Council.

The Conservancy, while strongly supporting voluntary bodies and often relying on them as its partners or agents, can do things which they cannot do. First, it commands a substantial and growing staff of zoologists, botanists, physiographers, soil scientists and others whose researches are directed to finding the answers to many problems fundamental to the sound management of nature reserves. It also has land agents, regional officers, foresters, wardens, woodmen and fencemen to carry out the work of reserve management up and down England, Wales and Scotland in accordance with a carefully planned national programme. It is armed with statutory powers to confer Crown Land status on its Nature Reserves, to make bye-laws and in the last resort to exercise compulsory purchase, as well as certain powers of dispensation under the 1954 Protection of Birds Act. Last but not least, it receives a Treasury grant of over £200,000 a year, and part of this is passed on in the form of grants-in-aid to (among others) ornithological bodies managing reserves and university departments engaged in ornithological research.

Local Authorities also, under the National Parks Act of 1949, possess similar powers to create local nature reserves, but must consult the Conservancy before acting.

Before the creation of the Conservancy the official report on Conservation of Nature in England and Wales (Cmd. 7122, July 1947) recommended 73 areas as National Nature Reserves, giving ornithological interest as the sole reason for the choice in 3 cases and as a partial reason in 28 others, the remainder being botanical, entomological and so forth. A parallel Report for Scotland, on a slightly different basis (Cmd. 7814, 1949) recommended 24 Scottish National Nature Reserves, of which 1 was put forward solely and 10 partially on ornithological grounds. These two lists included such famous bird haunts as the Farne Islands, Skomer, Skokholm, Grassholm, High Halstow Marshes, Tring Reservoirs, Minsmere, Hickling Broad, Blakeney Point, Scolt Head Island, Nottingham Sewage Farm, Hermaness, Noss, Tentsmuir, Loch Leven, the Isle of May, Ailsa Craig, Loch Druidibeg in South Uist, North Rona and St. Kilda. Some of these areas, it was pointed out, were already managed as Nature Reserves, others not, while other important areas were expected to be taken care of within projected National Parks and Conservation Areas.

Responsibility for action was entrusted in 1949 to the Nature Conservancy, which then had to be organized entirely from scratch and encountered many difficulties in securing a number of particular areas, in competition with a considerable number of older and larger official agencies, businesses and private individuals. However, up to the end of September 1955 the Conservancy had been able to complete negotiations and declare 35 National Nature Reserves, including several not on the original lists. Although the majority were chosen for mainly non-ornithological reasons some are of first-rate ornithological interest, including nearly 40,000 acres of the Scottish Cairngorms; Noss and Hermaness in Shetland; Orfordness-Havergate in Suffolk; Scolt Head Island, Norfolk; Bridgwater Bay, Somerset; Tring Reservoirs, mainly in Hertfordshire; and, in Wales, Cors Tregaron and Newborough Dunes. In the same period the County Councils of Lincolnshire (Lindsey), East Lothian and Cumberland had established Local Reserves at Gibraltar Point, Aberlady Bay and Ravenglass.

One of these areas (Scolt Head Island) and parts of two others (Havergate Island and Llanddwyn Island, Newborough) had previously been managed for similar purposes. At Scolt Head the National and Norfolk Naturalists' Trusts remain intimately associated with the management through a local committee, while at Havergate the Royal Society for the Protection of Birds not only continues to manage the island but, by a friendly arrangement, also looks after the Conservancy's land at Orfordness across the river. Here a watcher's hut has been provided and it is hoped to build up a considerable ternery out of the handful of pairs already breeding there. On the Cairngorms and at Newborough Dunes

the Conservancy has taken over the wardening responsibility from the R.S.P.B. and is in both cases covering a greatly extended area. While the advent of the Conservancy has thus substantially increased the number and acreage of areas under effective protection it is to be hoped that faster progress will soon be made in declaring additional National Nature Reserves, including several of those originally recommended but not yet brought into existence.

The Reserves so far declared are strong in some aspects of ornithological interest but weak in others. The Cairngorms Reserve provides for such rare mountain species as the Dotterel* and Snow Bunting, and for the Ptarmigan and Golden Eagle, and also among forest species the Crested Tit, Crossbill and Green-shank, although unfortunately some adjoining areas of fully equal ornithological interest could not be included. Hermance has a substantial proportion of the Great Skua population and like Noss has an important gannetry. Orfordness-Havergate, Scolt Head and Newborough are notable breeding places for terns and other shore-birds, among which the Avocets at Havergate are outstanding. Bridgwater Bay is, apart from the Knechtsand area near Heligoland, the only summer moulting assembly area yet known for Shelduck in western Europe. Tring Reservoirs saw the first British breeding record of the Little Ringed Plover and (except for Ireland and Anglesey) of the Black-necked Grebe; like the Morton Lochs on Tentsmuir they also attract many interesting passage migrants. There are, however, no adequately extensive heathlands to ensure permanent habitats for such threatened species as the Dartford Warbler, Stone Curlew and even Stonechat, nor are there any first-rate breeding places for duck and other waterfowl, or places where experiments in building up bird populations can be carried out.

While it is reassuring to know that these places now enjoy Crown Land status and are as safe as possible against encroachment or destruction, their declaration is in itself only a partial answer to the problem of bird protection. To a large extent that problem is incapable of solution in terms of a handful of particular areas; it calls for the treatment of the country as a whole. But the wider task in turn necessitates a series of open-air laboratories, living museums, demonstration and experimental sites and centres of colonization and conservation. Much can be learnt from and taught by a series of well-managed nature reserves, whose tested results can be scientifically assessed and widely disseminated. But in this difficult field good intentions are no substitute for professional competence. Too many sanctuaries, refuges and reserves have either existed only on paper or have been conceived merely as projects for policing the area against a handful of egg-collectors, shooters or vandals, or against furred and feathered predators. It has been too little appreciated that the habitat decides the fate of

* Scientific names are given in an appendix on page 522.

the birds and that right or wrong management can decide the fate of the habitat. Food, water, cover and undisturbed resting or loafing places can be maintained or provided, but they can equally be neglected or lost till the point comes when some of the birds cannot survive. When that happens it is apt to be the most specialized and the scarcer forms which suffer. The ecological succession of plants, changes in water tables and drainage, fire, grazing or other non-ornithological factors may determine success or failure. Even a reserve that is purely for birds must be managed with such factors constantly in mind, and it is not to be expected that ornithologists unaided can cope with their complexities, even when aware of their importance. Readiness to intervene as soon and as drastically as necessary must be matched by knowledge of the complex biological and hydrologic factors involved.

This might suggest that the Conservancy with its wider knowledge and greater resources ought to take over the management of all British nature reserves, but such a course is unnecessary and undesirable. Even the Conservancy might be wrong, and there is in any case a virtue in having a variety of separate responsible managements representing different backgrounds of experience and different points of view. But there is nothing to be said for neglecting or rejecting relevant knowledge, and here the Conservancy must bear the main burden of obtaining and marshalling the facts and techniques, and of translating them into terms understandable by local committees, estate agents, wardens and other non-technical persons and authorities, who may from lack of training, misjudgment or prejudice, be following practices which can be shown to be scientifically unjustified. Shooting of birds of prey, unwise introductions of plants or animals, unwise burning practices or neglect to control woody vegetation on open ground provide obvious examples. Ecological crimes and blunders are often perpetrated out of sheer ignorance that ecology exists, and that it can predict with increasing accuracy which effects will follow which actions.

There is no reason, given adequate understanding, why nature reserves should be confined simply to protecting what happens already to be there; the opportunities of enrichment of the fauna are immense. As soon as the R.S.P.B. began their successful effort to consolidate the position of the breeding Avocets at Haver-gate they contrived, merely by providing peace and quiet at the right point, to build up for the first time on record in Suffolk a flourishing colony of Sandwich Terns. The Conservancy, by providing nesting boxes at Yarnor Wood in South Devon were rewarded by the immediate and successful breeding of a pair of Pied Flycatchers—the most southerly British record. The experience of birds colonizing new reservoirs, sewage farms, forests and so forth shows the immense possibilities of a planned enrichment of our wild life, and of bird life in particular. The U.S. Fish

& Wildlife Service have done much successful pioneering in this direction.

While the importance of skilled habitat control and provision can hardly be over-emphasized it is unfortunately still true that policing against human and other pests cannot be neglected without unhappy consequences. The stiffer penalties of the 1954 Protection of Birds Act, provided it is adequately enforced, should be effective in time in stamping out systematic egg-collecting otherwise than under licence to meet real scientific requirements, despite the temporary set-back of the Home Secretary's unfortunate Order permitting all and sundry to take the eggs of an arbitrary group of common birds.

Yet if egg-collecting is brought under control other dangers are undoubtedly growing. More and more bird-watchers, aided by modern communications of all kinds, are able to gather with vulturine speed and efficiency at points where some unfortunate rare bird is attempting to breed or to rest on passage. While most are considerate and reasonable enough to use their field-glasses for watching from a proper distance without causing disturbance, a minority rush in and harry the rarity from place to place quite unnecessarily and without either mercy for it or courtesy towards later comers also hoping to get a view. The successful rearing of young by two pairs of Bee-eaters in Sussex during 1955 was achieved only through several ornithologists in relays sacrificing much leisure to the vigilant guarding of the breeding-site all day long against sometimes almost unbelievably inconsiderate intrusions. Hen Harriers breeding on a Scottish moor were similarly treated, to the natural annoyance of the landowner who had agreed to protect them, and of his harassed keeper who had other work to do. Reports of Golden Eagles being driven to desert by thoughtless disturbance showed an alarming increase, threatening to offset the gains of the hard-won special protection conferred on this species, at least in law, by the 1954 Act. It is to be hoped that public opinion among ornithologists will insist upon better bird-watching manners before more serious damage is done. If it were possible to feel assured that no bird-watcher would purposely or through carelessness cause such rare birds to desert their nests, or interfere with their feeding or rest, the task of wardens would be much easier, but discreditable incidents are disturbingly frequent. No one wants to see more restrictive bye-laws and Orders, more applications for permits and more prohibited areas; it is those who deny reasonable peace to rare visitors who threaten to involve us all in such nuisances. In many other advanced countries, including Holland, Switzerland and Scandinavia, far more discipline is strictly enforced upon visitors to nature reserves. Cannot self-discipline avert such developments here?

A further source of difficulty is the relation of shooting to nature reserves and sanctuaries. Here again the problem arises not from

the majority but from a selfish and badly-behaved minority, unwilling to accept the need for all sorts, including the birds, to live together on this crowded island. In principle there is much to be said for the argument that no shooting should ever be done anywhere in a nature reserve, except for pest control or other essential requirements of reserve management. This logical attitude may however not be appropriate in all special and local circumstances, and there is much to be gained from experimenting with different forms of controlled and limited shooting in suitable cases, and comparing the results with those found in unshot areas, which are by no means without problems of their own. Such an approach demands some mutual confidence. Tedious and petty bickering between the shooting men and ornithologists gets nowhere, and there has been far too much of it since the war. It should be possible to build up a national system of nature reserves and wildfowl refuges commanding the respect and support of shooting men as well as naturalists and the general public. A welcome start in this direction has been made by the co-operation of local naturalists and wildfowlers in supervising the new experimental Humber Wildfowl Refuge, covering some 20 square miles below high-water-mark used by wintering Pink-footed Geese and many species of duck and waders. Conservation is a concern of all citizens everywhere; it cannot fully achieve that status so long as it even appears to be merely the private and sectional campaign of an unreasonable minority. Like all movements which have grown big quickly, birdwatchers in particular are in danger of irritating and alienating other sections of the community unless they can develop attitudes which allow for the susceptibilities and legitimate interests of those who still cling to the odd practice of not watching birds. Properly handled, nature reserves and refuges can do much to assist the necessary adjustment, but this will not happen unless more of those who take an interest in birds will also take an interest in conservation, and in ensuring that there continues to be a rich variety of birds to watch in Britain.

APPENDIX—SCIENTIFIC NAMES OF SPECIES MENTIONED IN THE TEXT

Black-necked Grebe (<i>Podiceps nigricollis</i>)	Avocet (<i>Recurvirostra avosetta</i>)
Shelduck (<i>Tadorna tadorna</i>)	Stone Curlew (<i>Burhinus oedipnemus</i>)
Pink-footed Goose (<i>Anser arvensis brachyrhynchus</i>)	Great Skua (<i>Stercorarius skua</i>)
Golden Eagle (<i>Aquila chrysaetos</i>)	Sandwich Tern (<i>Sterna sandvicensis</i>)
Hen Harrier (<i>Circus cyaneus</i>)	Bee-eater (<i>Merops apiaster</i>)
Ptarmigan (<i>Lagopus mutus</i>)	Crested Tit (<i>Parus cristatus</i>)
Little Ringed Plover (<i>Charadrius dubius</i>)	Stonechat (<i>Saxicola torquata</i>)
Dotterel (<i>Charadrius morinellus</i>)	Dartford Warbler (<i>Sylvia undata</i>)
Greenshank (<i>Tringa nebularia</i>)	Pied Flycatcher (<i>Muscicapa hypoleuca</i>)
	Crossbill (<i>Loxia curvirostra</i>)
	Snow Bunting (<i>Plectrophenax nivalis</i>)

MOVEMENTS OF CERTAIN SPECIES AT THE IRISH SEA BIRD OBSERVATORIES IN 1954

By PETER DAVIS and JOHN WEAVING

A—THE NORMAL MIGRANTS

THE following facts have been extracted from the weekly reports issued from Bardsey, Saltee, Skokholm and Lundy. These reports show the numbers recorded each day of the following species:—Skylark*, Swallow, House Martin, Sand Martin, Fieldfare, Song Thrush, Redwing, Wheatear, Black Redstart, Sedge Warbler, Whitethroat, Willow Warbler, Chiffchaff, Meadow Pipit, Pied/White Wagtail, Yellow Wagtail, Starling, Goldfinch, Linnet, Chaffinch. In Table I Willow Warblers and Chiffchaffs are treated together and Pied/White Wagtails are referred to as "Alba" Wagtails.

The peak figures given below are taken from a complete tabulation of the numbers seen daily at the Observatories. Sedge Warbler, Yellow Wagtail, and Goldfinch occurred in very small numbers. There were only a few scattered records of Black Redstarts, usually of single birds, and most frequent in late April.

The shapes of peaks vary, those on the two large islands tend to be more rounded, occasionally with a gradual build-up and usually with a slow dispersal. On Skokholm and Saltee the reverse is usual, in most heavy movements large numbers being recorded on one day only.

Wind Conditions

Despite the differences recorded in Table II, conditions on most days were very similar on all the islands, particularly as regards wind strength. Wind strengths tend to be lighter on Bardsey than on Skokholm or Saltee. At Lundy the observations are made considerably higher above sea level, and the winds recorded are usually stronger.

Prolonged study of the weather data fails to give much indication as to why some peaks are shared by all observatories, and others confined to one or two. In the case of nocturnal migrants there are not sufficient data available about overnight conditions.

In autumn all heavy movement was recorded in the calmer intervals after periods of gales. In mid-September gales moderated on Bardsey on the 17th, but did not moderate on the other islands until the 18th. Gales of the 19th, 20th and 21st were not recorded at Bardsey; this may explain why this island did not share the Meadow Pipit and Swallow peaks of the 22nd. Gales of the 23rd and 24th also moderated earlier on Bardsey yet the 27th was a peak-day at all observatories. Fresh southerly winds moderated on the 6th October at Bardsey and Saltee, but not until the 7th at

* Scientific names of species mentioned in the text are all given in an appendix on page 532.

TABLE 1—DATES OF PEAK MOVEMENTS AT THE IRISH SEA OBSERVATORIES
IN 1954

Numbers are given in brackets.

1954	<i>Bardsey</i>	<i>Saltee</i>	<i>Skokholm</i>	<i>Lundy</i>
April				
5	Meadow Pipit (100)	Closed		
6		Closed		Swallow (50)
10	Chiff/Willow Warblers (500)	Closed		
12		Chiff/Willow Warblers (225)	Chiff/Willow Warblers (120)	
14				Hirundinidae (220)
16		Chiff/Willow Warblers (312)		
19			Swallow (250)	.
20			Swallow (300)	
21		Hirundinidae (250)	Wheatear (100)	
22	Wheatear (20) Swallow (20)	Wheatear (60)	Wheatear (125)	Wheatear (40)
23	Alba Wagtail (11)	Swallow (500)		Closed
24	Meadow Pipit (50)		Swallow (500) Sand Martin (50)	Closed
26	Wheatear (40)	Wheatear (75)		Closed
27			Chiff/Willow Warblers (100)	Closed
May				
1		Swallow (200)		Closed
7	Swallow (40)		Chiff/Willow Warblers (60)	Closed
8	Sand Martin (50)	Swallow (100)		Closed
10		Swallow (100)	Swallow (80)	Closed
11		Swallow (100)		Closed

<i>Bardsey</i>	<i>Saltee</i>	<i>Skokholm</i>	<i>Lundy</i>
May 12		Swallow (250)	Closed
13 Whitethroat (60)	Whitethroat (125)	Whitethroat (250)	Closed
Aug. 3	Closed	Chiff/Willow Warblers (50)	
6	Closed	Chiff/Willow Warblers (50)	
7 Chiff/Willow Warblers (400)	Closed		
8	Closed		Chiff/Willow Warblers (200)
9	Closed	Chiff/Willow Warblers (40)	Chiff/Willow Warblers (100)
16 House Martin (50)	Closed		
22 Wheatear (30)			
23		Alba Wagtail (20)	
26 Swallow (30)	Swallow (31)	Swallow (50)	
29 Meadow Pipit (100)			
Sept. 2 Swallow (40)	Swallow (491) Sand Martin (76)		Swallow (35)
4 Wheatear (20)			Wheatear (40)
5 Alba Wagtail (25)		Alba Wagtail (25)	
6 Wheatear (25)		Swallow (200)	
11		Swallow (200)	Swallow (80)
14		Swallow (150)	Swallow (100)
17 Meadow Pipit (10) Alba Wagtail (40)	Alba Wagtail (24)		
18 Meadow Pipit (100)	Meadow Pipit (100) Swallow (185)	Meadow Pipit (300) Swallow (500) Alba Wagtail (25)	Meadow Pipit (140) Swallow (600) Chiff/Willow Warblers (100) Wheatear (30) Whitethroat (120) Sedge Warbler (8)

1954	<i>Bardsey</i>	<i>Saltee</i>	<i>Skokholm</i>	<i>Lundy</i>
Sept.				
19	Meadow Pipit (100)			
22		Meadow Pipit (100) Swallow (1,175)	Meadow Pipit (200) Swallow (200)	Meadow Pipit (220) Swallow (440)
24		Yellow Wagtail (20)		
25	Swallow (60)		Meadow Pipit (150)	
26	Swallow (50)	Swallow (70)	Swallow (200)	Linnet (75)
27	Meadow Pipit (200) Alba Wagtail (50) Skylark (100)	Meadow Pipit (300) Skylark (50) Swallow (200)	Meadow Pipit (250) Swallow (200) House Martin (20)	Meadow Pipit (300) Skylark (20) Swallow (150) House Martin (20)
29		Linnet (30)		
Oct.				
6	Meadow Pipit (500) Swallow (35) Alba Wagtail (50) Skylark (70)	Meadow Pipit (1,000) Swallow (200) Alba Wagtail (13) Skylark (150) Linnet (80)	Swallow (60)	Meadow Pipit (50) Swallow (50)
7	Meadow Pipit (50) Alba Wagtail (40) Skylark (500) Chaffinch (500)	Meadow Pipit (150) Alba Wagtail (12) Skylark (25)	Alba Wagtail (12) Song Thrush (10)	Meadow Pipit (2,020) Skylark (310) Swallow (80) Linnet (40)
8	Song Thrush (10) Chiff/Willow Warblers (20)		Swallow (100)	
9	Starling (50)	Closed	Alba Wagtail (25)	Starling (45)
10	Starling (150)	Closed		
Oct.				
14	Meadow Pipit (300) Linnet (100) Alba Wagtail (25) Starling (70)	Closed		

1954	<i>Bardsey</i>	<i>Saltee</i>	<i>Skokholm</i>	<i>Lundy</i>
<i>Oct.</i>				
16	Meadow Pipit (100) Linnet (150) Chaffinch (200)	Closed		Meadow Pipit (150) Chaffinch (70)
18		Closed		Chaffinch (110)
19	Meadow Pipit (400) Linnet (100) Chaffinch (150) Starling (70)	Closed		Meadow Pipit (47)
20	Starling (150)	Closed	Swallow (20)	Chaffinch (1,050) Swallow (25)
21	Chaffinch (200) Goldfinch (30)	Closed	Chaffinch (30)	Chaffinch (500) Starling (120)
22	Song Thrush (30)	Closed		
23		Closed		Starling (100)
24	Chaffinch (200)	Closed		
25	Meadow Pipit (50) Skylark (150) Chaffinch (400) Redwing (30) Song Thrush (30)	Closed	Redwing (10)	Skylark (20) Chaffinch (250) Redwing (33) Fieldfare (10)
26	Chaffinch (1,000)	Closed	Chaffinch (40)	
27	Meadow Pipit (50)	Closed	Chaffinch (35)	
31	Starling (1,000)			
<i>Nov.</i>				
1	Meadow Pipit (150) Song Thrush (60)		Chaffinch (100)	Chaffinch (200)
2	Starling (150)	Starling (130) Meadow Pipit (35) Redwing (45) Fieldfare (10)	Closed	Starling (200) Chaffinch (270)
3			Closed	Starling (200)

1954	<i>Bardsey</i>	<i>Saltee</i>	<i>Skokholm</i>	<i>Lundy</i>
Nov.				
4	Song Thrush (70)		Closed	Chaffinch (200)
5	Starling (500)		Closed	Starling (350)
6	Starling (600)	Starling (1,500) Chaffinch (150)	Closed	Chaffinch (300) Redwing (30)
7	Meadow Pipit (140)	Chaffinch (150)	Closed	Chaffinch (300) Fieldfare (50)
8	Starling (400)	Starling (500) Redwing (50)	Closed	Chaffinch (350)
12	Chaffinch (150)		Closed	Chaffinch (200)
13	Starling (400)	Chaffinch (80) Starling (500)	Closed	Chaffinch (250)
15	Skylark (60) Linnet (50) Fieldfare (10) Starling (1,500)	Skylark (20) Linnet (18) Chaffinch (100) Fieldfare (10) Starling (4,500)	Closed	Skylark (25) Fieldfare (150) Starling (1,000) Song Thrush (20)
16	Chaffinch (300) Starling (1,500)		Closed	
17	Redwing (200) Song Thrush (200) Fieldfare (100)		Closed	
18				Starling (400) Chaffinch (110)

Skokholm and Lundy. On 14th, 16th and 19th October, Bardsey had light winds, but at Skokholm and Lundy winds were up to force 8. The gale of 24th October was followed by the peaks of the 25th. In November weather conditions differed considerably at the three observatories open. Bardsey had strong winds from the 9th to the 13th with a gale on the 11th. Saltee had gales on

TABLE II.—WIND DIRECTION AT IRISH SEA OBSERVATORIES IN 1954

Number of days during which each direction was recorded in the periods when all observatories were in operation.

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Var.
Bardsey	14	11	9	14	4	31	11	31	1
Saltee	11	12	4	9	14	47	15	13	2
Skokholm	6	2	6	28	2	22	28	30	2
Lundy	7	19	4	4	1	28	29	34	0

the 6th, 8th 11th and 13th and Lundy had gales on the 8th, 10th and 11th, with strong winds on the 12th and 13th.

Direction of Flight

This is recorded where possible in the weekly reports from the observatories. The data have not been included in this paper, as it is considered essential to have local knowledge to interpret the recorded directions. At Saltee, even in moderate winds, the majority of birds arrive up wind, with a small proportion down wind. Such a pattern gives very little clue to the actual direction of a movement, as drift would cause an exactly similar situation, if birds flew a visual course for the islands from all points of the compass. Departure at Saltee is usually from either end of the long axis of the island, the direction of flight tending to be up wind, but probably influenced by the proximity of the Little Saltee (1 mile N.E.), Hook Point (12 miles N.W.) and Conningmore Rock (2 miles S.W.).

It is hoped in 1955 to include in the weekly report the peak hour of movement at each observatory. These data may help to show whether shared peaks are part of one large movement or are separate local movements caused by similar conditions. The data may also help to indicate the general direction of a movement.

B—SCARCE BIRDS AND DRIFT-MOVEMENTS

In this section the April-November 1954 records of the rarer birds are summarized, and related to the weather situation.

As usual, vagrants from southern Europe form the most important group, and birds from Iceland-Greenland compete with those of northern Europe for second place. If the abundant Greenland Wheatears and White Wagtails were to be included, the north-western drift contribution would far exceed that from the north-east. The wheatears and wagtails are not included here, however, firstly because of the difficulties of racial determination (few are trapped); secondly because they winter only in the Old World, and we can seldom know to what extent their arrival point has been dictated by the airstreams in which they move. Probably most of those we see are already "coasting", having entered Britain farther north.

The drift-periods affecting two or more observatories during the 1954 season are described in detail below. Comparison with the tables in the first section will show that, as in 1953 (see *antea*, vol. xlvii, pp. 414-422), the vagrant-records were seldom associated with large movements of common nocturnal migrants.

21st-28th April

Bardsey: One Pied Flycatcher, 21st; one Golden Oriole, 28th. *Saltee*: One Hoopoe, 21st; 22nd 24th, two 23rd and 26th; one Tawny Pipit, 21st-26th. *Skokholm*: One Hoopoe, 23rd-25th and 28th; one Black Redstart, 25th; one Reeve, 26th. *Lundy*: One Hoopoe, 22nd, 23rd and 26th, two 24th; two Pied Flycatchers, 23rd (F. W. Gade).

An anticyclone was centred between Iceland and Norway on the

21st, moving south into the northern North Sea on the 22nd. Winds were south-east from N.W. France to S. Ireland in the early hours of the 21st, though still E.N.E. to E. in southern Britain. This may explain why Saltee had the earliest arrivals. By the early hours of the 23rd, the south-easterly winds were general in south-west Britain also. High pressure was centred over the Faeroes by the 25th and the airflow was predominantly N.E. or E. across south Britain on this and the following day.

On the 27th the high moved south across the Western Isles and into Ireland. Winds were very light and becoming variable in the south-west, remaining E.N.E. in south England and north-west France. On the 28th-29th, with a depression moving south into the North Sea, the high was displaced, and winds became south-westerly in our observation-area.

9th-12th May

Saltee: One Montagu's Harrier, 9th-12th; one Pied Flycatcher, 9th, 10th and (different bird) 11th. *Skokholm*: One Black-tailed Godwit, 11th (to 25th); one Marsh Harrier, 12th and 13th. (Lundy was closed).

On 8th May pressure was low over the North Atlantic, and high over Scandinavia. A secondary low centre was moving north-east from the Azores. The influence of this secondary low extended to the British Isles on the early morning of the 9th, with south-easterly winds ahead of, and immediately behind, an occluded front. Cloud-cover was moderate to dense in the south-west. The front, having crossed the south-west on the 9th, retreated again before the expanding Scandinavian high on the 10th, and the secondary was reabsorbed by the main Atlantic low on the 11th. Winds were variable (mainly with a westerly component) on the 10th, as an extension of the Azorean high became established over Biscay, but became south-easterly again early on the 11th. Conditions were now calm and fine over north-west France, though cloud remained moderate to thick in the south-west of Britain. The Biscay high moved into the Channel on the 11th, linking up with the Scandinavian high. Conditions were generally fine in the south-west and in France, with light south-east winds in the extreme west. On the evening of the 12th, an ill-defined front reached across Britain from north to south, and winds became northerly.

26th-27th August

Bardsey: One Melodious Warbler, 27th (*antea*, p. 284). *Saltee*: One Woodchat Shrike, 27th. *Skokholm*: One Garden Warbler, 26th; one Pied Flycatcher, 26th, two 27th; one Hoopoe, 27th; one Wood Warbler, 27th. *Lundy*: One Garden Warbler, 26th.

By the early hours of the 26th, a ridge of the Azorean High was extending over south-west Britain. Calm, clear conditions reached the area, with light north-easterly winds over the southern half of England. The ridge was well established by the evening of the 26th, and during the night winds were easterly in the

Channel, southerly from western France to the Irish Sea. The birds seen on the 26th were probably from mainland Britain, those of the next day from France.

30th August-1st September

Saltee: One Barred Warbler, 30th-1st; one Garden Warbler, 1st. *Lundy*: One Melodious Warbler, 31st (*antea*, p. 284); one Bonelli's Warbler (*antea*, p. 285) and seven Pied Flycatchers, 1st.

On 29th August a depression was approaching northern Britain from the Atlantic, and the warm front crossed Ireland and south-west England. Early on the 30th, there were light south-westerly winds in the south-west; to the south, however, there was a high-pressure centre over Biscay, and winds were easterly in south-west France and north Spain, southerly in the sea-areas Finistère and Sole. By the early hours of the 31st, this high had moved over central France, and there was a south-east to south airflow into south-west Britain. France had fine, clear conditions from late 29th through the 1st. The weather situation remained unchanged until the cold front of the northern depression crossed our area early on the 2nd, when winds became westerly.

10th-11th September

Saltee: Subalpine Warbler, 10th. *Lundy*: Icterine or Melodious Warbler, 11th; (Black Redstart? 12th).

An extensive low was centred west of Ireland, with a wave-secondary forming to the south-west of the British Isles late on the 9th. The warm front of this secondary moved north across Biscay, with southerly winds and fine weather to the south (north Spain and west France), but south-westerly winds and moderate to dense cloud in south-west Britain. It is possible that the birds may have arrived on these winds, but conditions from mid-day on the 10th were totally unsuitable, south-westerlies prevailing over the whole Atlantic seaboard of Europe.

12th-17th September

Skokholm: One Lapland Bunting, 12th. *Lundy*: One Lapland Bunting, 14th, 15th and 17th.

The extensive low of 10th-11th September had moved over Norway, but had a secondary centre over south Iceland. There was calm, fine weather in Greenland, and winds were north-west, west, and south-west across the North Atlantic, round the southern side of the depression, from the 11th until the 17th.

8th-10th October

Bardsey: One Reed-Warbler, 8th; one Hobby, 10th. *Lundy*: One Woodlark and one Reed Warbler, 9th.

Conditions were calm in south-east England and in Brittany in the early hours of the 8th; the south-west had light southerly winds near a warm front crossing St. George's Channel and the Irish Sea. Winds were south-westerly behind the front, but remained light through the 10th.

The following isolated records of unusual birds are given for the sake of completeness:

Bardsey: One Blue-headed Wagtail, 1st June; one Greenish Warbler, 16th June (*antea*, vol. xlvii, p. 408); one Hawfinch, 14th October; one Red-breasted Flycatcher, 19th and 20th October.

Saltee: One Hoopoe, 23rd September (south-easterly winds in N.W. France, calm in south-west Britain); one Bluethroat and one Rose-coloured Starling, 27th September (probably came by way of the Low Countries, moving in a narrow belt of north-east to east winds across S. Britain: conditions were quite unfavourable to the north and south of this belt, which persisted for only a few hours early on the 27th); one Short-toed Lark, 5th October; one Siberian Lesser Whitethroat (*S. c. blythi*) trapped, 15th November.

Skokholm: Two Reeves, 12th August (southerly winds ahead of a warm front); [one Red-headed Bunting, 14th August (clear, calm at Skokholm, but surrounding winds south-westerly!)] one Little Stint, 23rd August; two Grey Lag Geese, 1st October (westerly weather); two Iceland Redwings (*T. m. coburni*) trapped 19th October (good cyclonic approach from Iceland); eight White-fronted Geese 25th October (bills not seen clearly, but probably Greenland origin; good anticyclonic approach).

Lundy: One Twite, 5th June; several records of up to three Lapland Buntings in October (conditions mostly suggest these were "coasting"), one Ortolan Bunting, 3rd October (whole of Britain in S.S.E. to S. airstream ahead of cold front of an elderly depression centred S. of Iceland); one Long-eared Owl, 15th October; one Red-breasted Flycatcher, 23rd October (there had been moderate to fresh westerly winds for several days!); one Yellowthroat, 4th November (*antea*, pp. 145-147).

APPENDIX—SCIENTIFIC NAMES OF SPECIES MENTIONED IN THE TEXT

- | | |
|--|---|
| Grey Lag Goose (<i>Anser anser</i>) | Garden Warbler (<i>Sylvia borin</i>) |
| White-fronted Goose (<i>Anser albifrons</i>) | Whitethroat (<i>Sylvia communis</i>) |
| Marsh Harrier (<i>Circus aeruginosus</i>) | Lesser Whitethroat (<i>Sylvia curruca</i>) |
| Montagu's Harrier (<i>Circus pygargus</i>) | Subalpine Warbler (<i>Sylvia cantillans</i>) |
| Hobby (<i>Falco subbuteo</i>) | Willow Warbler (<i>Phylloscopus trochilus</i>) |
| Black-tailed Godwit (<i>Limosa limosa</i>) | Greenish Warbler (<i>Phylloscopus trochiloides</i>) |
| Little Stint (<i>Calidris minuta</i>) | Chiffchaff (<i>Phylloscopus collybita</i>) |
| Ruff (<i>Philomachus pugnax</i>) | Wood Warbler (<i>Phylloscopus sibilatrix</i>) |
| Long-eared Owl (<i>Asio otus</i>) | Bonelli's Warbler (<i>Phylloscopus bonelli</i>) |
| Hoopoe (<i>Upupa epops</i>) | Pied Flycatcher (<i>Muscicapa hypoleuca</i>) |
| Short-toed Lark (<i>Calandrella brachydactyla</i>) | Red-breasted Flycatcher (<i>Muscicapa parva</i>) |
| Woodlark (<i>Lullula arborea</i>) | Meadow Pipit (<i>Anthus pratensis</i>) |
| Skylark (<i>Alauda arvensis</i>) | Tawny Pipit (<i>Anthus campestris</i>) |
| Swallow (<i>Hirundo rustica</i>) | Pied/White Wagtail (<i>Motacilla alba</i>) |
| House Martin (<i>Delichon urbica</i>) | Yellow Wagtail (<i>Motacilla flava</i>) |
| Sand Martin (<i>Riparia riparia</i>) | Woodchat Shrike (<i>Lanius senator</i>) |
| Golden Oriole (<i>Oriolus oriolus</i>) | Starling (<i>Sturnus vulgaris</i>) |
| Fieldfare (<i>Turdus pilaris</i>) | Rose-coloured Starling (<i>Sturnus roseus</i>) |
| Song Thrush (<i>Turdus philomelos</i>) | Hawfinch (<i>Coccothraustes coccothraustes</i>) |
| Redwing (<i>Turdus musicus</i>) | Goldfinch (<i>Carduelis carduelis</i>) |
| Wheatear (<i>Enanthe ænanthe</i>) | Linnet (<i>Carduelis cannabina</i>) |
| Black Redstart (<i>Phœnicurus ochruros</i>) | Twite (<i>Carduelis flavirostris</i>) |
| Bluethroat (<i>Cyanosylvia svecica</i>) | Chaffinch (<i>Fringilla cœlebs</i>) |
| Yellowthroat (<i>Geothlypis trichas</i>) | Red-headed Bunting (<i>Emberiza bruniceps</i>) |
| Reed Warbler (<i>Acrocephalus scirpaceus</i>) | Ortolan Bunting (<i>Emberiza hortulana</i>) |
| Sedge Warbler (<i>Acrocephalus schœnbænnus</i>) | Lapland Bunting (<i>Calcarius lapponicus</i>) |
| Melodious Warbler (<i>Hippolais polyglotta</i>) | |
| Icterine Warbler (<i>Hippolais icterina</i>) | |
| Barred Warbler (<i>Sylvia nisoria</i>) | |

BEWICK'S SWANS IN THE FENLANDS: THE PAST AND PRESENT STATUS

By I. C. T. NISBET

IN recent years a substantial wintering population of Bewick's Swans (*Cygnus bewickii*) has developed in the fenlands, and it seems desirable to summarize recent notes on this population, many of which have already been published in the *Cambridge Bird Club Report*. The wildfowl of this region have now been studied intensively for three seasons by members of the Cambridge Bird Club, and in this paper are summarized observations on Bewick's Swans in these three winters, with a comparison with previous published records and notes on the recent change in status.

For information and records used here I am very much indebted to a large number of observers, but I should mention in particular W. R. P. Bourne, H. F. Dixon, C. G. B. ten Kate, M. J. M. Larkin, C. D. T. Minton, P. E. Naylor, E. J. Redshaw, R. F. Rutledge, T. C. Smout and A. E. Vine.

LOCALITIES

The only important wintering area for these birds is the Ouse Washes, the flood-reservoir for the Ouse drainage basin, extending for 20 miles through the S.E. Fens. Birds have also been recorded regularly in recent years from the Nene Washes (N.W. Cambridgeshire) and not infrequently from other open waters in the area, such as the Welland Washes (Lincolnshire), the Cam Washes and Cambridge sewage farm (S. Cambridgeshire) and occasionally from the coasts of the Wash. These herds have been quite small, however, exceeding 10 birds only in the 1954-55 winter, referred to below. Almost all these localities are flooded areas, and their suitability hence sometimes varies markedly from year to year.

RECORDS SINCE 1952

The following are brief summaries of the many scattered records for the past three seasons on the main wintering area:

1952-53: Flooding early, in mid-November. Bewick's Swans first seen on 4th January, and a total of 98 present by 18th January. A slight increase later, as at least 104 seen together on 21st January—the total may then have been about 120. Subsequently a fall in flood-level scattered the birds, but probably at least 80 were present during February, and 53 were seen together on 1st March.

1953-54: Flooding very late, about 10th February. A few scattered records from 17th January onwards, but no numbers until the second half of February, when scattered herds of up to 29. Largest complete count 41 on 28th February. Last records 15 on 17th March, 11 on 21st March, from different areas.

1954-55: Flooding early—about 10th November, persisting until mid-April. A fuller series of records indicates three main arrivals:

11 first noted on 17th December; an increase to 105-110 took place at some time in the first three weeks of January; another increase to over 250 occurred between 2nd and 6th February. Complete counts were made of 254 on 11th February and 252 on 15th March; in this period most of the birds (i.e. over 150) were usually to be seen together. On 22nd March large numbers were seen flying N.N.E. in the evening, and the last 11 were seen on 3rd April. It is of interest that these record numbers were paralleled by unusual numbers in other parts of the fens, and also by a widespread incursion into parts of southern and midland England (Ferguson-Lees, in press).

For comparison the wintering population of Mute Swans (*Cygnus olor*) on this water has been fairly stable at 110-130 in this period, though larger numbers have occurred at times, e.g. 400 in January 1942.

HABITAT—BEHAVIOUR—NON-BREEDING

The birds in this area frequent shallow flood-water exclusively, and appear to feed more or less entirely over grassland. In each season the birds settle on a few places which are favoured particularly above others, but these preferences vary considerably from year to year. Nor do the numbers remain constant at these centres, for there is always an interchange of birds flying from one herd to another. Indeed the birds spend so much time on the wing that it is difficult to avoid the impression that one of the major attractions of this water to the birds is the great scope that its size offers for long-distance flying.

The Swans rarely associate with other species, though a few Mute Swans and Whooper Swans (*Cygnus cygnus*) and sometimes grey geese (*Anser* sp.) join the herds occasionally.

Only a few records are available of the proportion of immature birds, as the marked tendency for family parties of one or two adults and four or five young to separate from larger herds consisting only of adult birds renders sample counts valueless. In the 1953-54 winter, however, the combined records indicate a proportion of immature birds around 44%, and in 1954-55 a count of the whole population gave nearly 35% young (88 out of 254). Since very few of the family parties contain less than 3 young this suggests that a substantial part of the adult population—perhaps over 60%—consists of non-breeding birds. Further observations of this kind would be of great interest.

RECORDS PRIOR TO 1953

Lack (1934) knew of no recent records of the species in Cambridgeshire; the present wintering-area was then watched only intermittently, but it seems likely from the fact that the Whooper Swan was then known (as now) as a fairly regular visitor to the same areas, that the Bewick's Swan was then at most a scarce vagrant. The first recent Cambridgeshire records were in 1938-39 (Witherby, 1939), and since then numbers have been increasing

rather erratically: the following are the largest herds recorded each winter:

1938-39	11	1944-45	1	1950-51	30
1939-40	Nil	1945-46	Nil	1951-52	7
1940-41	26	1946-47	33	1952-53	104
1941-42	6	1947-48	2	1953-54	29
1942-43	1	1948-49	5	1954-55	242
1943-44	1	1949-50	5		

Some of this variation was undoubtedly due to incomplete observation, and though birds appear to have been present throughout some of the earlier winters (e.g. 1940-41 and 1946-47), in other seasons only wandering herds seem to have been involved. It seems likely that wintering has been regular only since 1949-50 or 1950-51.

These records follow the general pattern of those for the past three winters, the vast majority being between early January and mid-March. As a whole the records indicate a series of arrivals each year between mid-December and the third week of February—the largest being between the New Year and 10th February—and a very consistent departure in the third or fourth week of March. The extreme dates in the area are 21st November (1954) and 15th May (1955).

THE CHANGE IN STATUS

The records summarized above show that the species now winters regularly, and that in recent years the numbers have (with marked fluctuations) been increasing rapidly. It is hence suggested that the large numbers in 1954-55 merely reflect a good year in the general increase, so that the influx elsewhere (Ferguson-Lees, in press) may indicate that a similar increase is affecting the whole of southern England.

The causes of the fluctuations are of interest. There is some correlation between the earlier records of large numbers and prolonged periods of hard weather (e.g. 1941 and 1947). Recently, however, the principal factor influencing the numbers wintering seems to have been the suitability of the area at the period when the largest arrivals usually take place: thus in 1951-52 and 1953-54 there was very little flood-water in January or the first half of February, while in 1950-51, 1952-53 and 1954-55 the area was fully flooded at this period. With allowance for this factor the increase has been regular since 1949-50.

This suggests that the birds pass through the area regularly in January and February, the numbers that remain to winter being determined by local conditions only. It is therefore necessary to examine other aspects of the European distribution in order to account for the increase in England. The most relevant countries now frequented by large numbers of Bewick's Swans are Ireland and the Netherlands, and up-to-date information from these countries has very kindly been supplied by Major R. F. Rutledge and Dr. C. G. B. ten Kate respectively.

Although Kennedy, Rutledge and Scroope (1955) record a notable decrease during this century, Ireland still seems to be the

ultimate destination of a substantial part of the European population, and the status there is of great interest. Ruttledge reports that although there are some records of large herds in Ireland in October, November and December, the largest numbers are consistently recorded in January: the increase at this time is fairly considerable, but the observation is too irregular to gauge its extent. March is another month of high figures there, which Ruttledge attributes to local movements and gatherings prior to departure.

The arrival of large numbers in Ireland in October and November, a time when the species is reputedly rare in Scotland, England and France, is a fact of special interest in itself, but this information is of value here in that it shows that birds pass from the Continent to Ireland in substantial numbers during January. It is natural to relate the arrivals in England at the same period in the winter (already interpreted here as showing a regular through movement) to this late migration.

In view of this it seems significant that the first records in the fenlands occurred in 1938-39, at the end of the period which saw the decrease and ultimate virtual disappearance from Scotland (Baxter and Rintoul, 1953). The details of the Scottish records indicate that the population there was always rather transitory, and these facts together suggest that at this period a complete change took place in these late birds' migration to Ireland: a direct flight across England replacing a more leisurely movement through Scotland. It is tempting to connect this change with the marked changes in distribution which occurred at the same time on the IJsselmeer (Zuiderzee), the principal European haunt of the species, caused by the change in the distribution of vegetation in connection with the desalination following its enclosure in 1932 (Brouwer and Tinbergen, 1939). The new conditions on the IJsselmeer may have encouraged the late migrants to remain there longer and shorten their subsequent migration to Ireland; the redistribution probably involved no more drastic shift of population than this, for ten Kate knows of no exact data which confirm a distinct change in the status as a whole in the Netherlands between 1930 and 1938. The start of regular wintering in the fens of England after ten years' "prospecting" may then have been due to further habitat changes elsewhere.

Other information from Holland is largely of negative value for its bearing on the changes in England: the general status there has altered little since described by ten Kate (1930). Bewick's Swans arrive there usually in the first half of October, and normally most leave only in *severe* weather, returning soon after the frost-periods: a part of the population winters as long as there is open water. No records indicate any change in status over the last few years. These cold-weather movements clearly do not influence substantially the wintering-population in England—in 1954-55, for example, much larger numbers remained to winter in the eastern part of the IJsselmeer than in 1953-54—and they

must be considered apart from the movements in January and February which seem to have led to the increase in England. Witherby (1939), however, related the influx of December 1938 to a departure from Holland at the onset of a cold spell, but this may have been exceptional, as it followed so closely the change in distribution and migration routes. It is evident that the European distribution is still in a state of flux, and the effects of further habitat change, drainage and climatic amelioration may be awaited with great interest.

It is possible that local habitat changes may have further favoured the increase in the fens. With persistent dredging of the draining rivers, the main wintering area is now flooded (if at all) less deeply than formerly, and may therefore have become more attractive to shallow-water birds. Certainly the increase of Bewick's Swan has been paralleled by a great increase in the numbers of Teal (*Anas crecca*) and Pintail (*A. acuta*)—see Nisbet, 1954, 1955—frequenting the same area, and by a corresponding decrease in the numbers of Pochard (*Aythya ferina*) and Tufted Duck (*A. fuligula*). This rather uncertain factor, however, can only account for part of the observed increase.

SUMMARY

Since 1938 Bewick's Swans (*Cygnus bewickii*) have occurred regularly each winter in the fenlands, where formerly they were very scarce. In recent years the numbers have been increasing very rapidly (subject to fluctuations due to varying flood-level) and in 1954-55 over 250 birds remained for the winter. Published records and recent intensive observations are summarized briefly.

It is suggested that the wintering habit is developing from a movement of the birds from Holland to Ireland for the latter part of the winter; this migration now appears to cross England where formerly a route through Scotland was favoured, and habitat changes have helped to lead to an increasing tendency for the passing herds to remain for the winter.

REFERENCES

- BAXTER, E. V. and RINTOUL, L. J. (1953): *The Birds of Scotland*. Edinburgh.
 BROUWER, G. A. and TINBERGEN, L. (1939): "De verspreiding der kleine zwanen, *Cygnus b. bewickii*, in de Zuiderzee, voor en na de verzoeting". *Limosa*, xii: 1-18.
 FERGUSON-LEES, I. J. (in press): "The influx of Bewick's Swans in England in early 1955." *Brit. Birds*.
 TEN KATE, C. G. B. (1930): "Over de talrijkheid van *Cygnus bewickii bewickii* Yarr. in den winter langs de Oost-kust van de Zuiderzee." *Limosa*, ii: 187-198.
 KENNEDY, P. G., RUTLEDGE, R. F. and SCROOPE, C. F. (1955): *The Birds of Ireland*. Dublin.
 LACK, D. (1934): *The Birds of Cambridgeshire*. Cambridge.
 NISBET, I. C. T. (1954): "The status of Pintail inland in the fens." *Brit. Birds*, xlvii: 395-397.
 — (1955): "Pintail in the fens in the 1954-55 winter." *Brit. Birds*, xlviii: 321-322.
 WITHERBY, H. F. (1939): "The influx of Bewick's and Whooper Swans, winter 1938-39". *Brit. Birds*, xxxii: 378-381.

PHOTOGRAPHIC STUDIES OF SOME LESS FAMILIAR BIRDS

LXVIII. GREY PLOVER

Photographed by NIALL RANKIN, R. P. BAGNALL-OAKELEY,
S. BAYLISS SMITH and B. METCALFE

(Plates 65-67)

SINCE it is a regular winter-visitor in some numbers to all coasts of the British Isles except the far north and north-west—a few stay the summer as well—the Grey Plover (*Charadrius squatarola*) can hardly be called a “less familiar” bird. It is, however, certainly one that has rarely been photographed—which is not surprising as its Arctic breeding range is limited to a strip, only 300-500 miles in width, across the far northern tundra of the U.S.S.R. from the White Sea to the Bering Straits, and similarly across Arctic America from Alaska to Baffin Island. Further, its distribution is patchy within these areas and nowhere is it thick on the ground: pairs seem seldom to be less than half a mile apart and often more than twice that distance. It was in Alaska in 1950 that Niall Rankin obtained his fine photographs of the pair at the nest (plates 65 and 66, upper); the first shows well the striking breeding-plumage of the male and the second the duller, less cleanly coloured dress of the female, with little indication of the white border to the dark under-parts. The nest, usually on some slight eminence in marshy tundra, is no more than a simple scrape about 6 inches across and $1\frac{1}{2}$ inches deep, lined with reindeer moss or lichen; both sexes incubate the four eggs which are usually laid in June. In winter the Grey Plover becomes spread over a large part of the globe and is found in western Europe, Africa, India, the Malay Archipelago, Australia, southern North America, and South America particularly in the west; it is, however, mainly a bird of the coastal marshes and mud-flats, except in a few areas like the Mississippi valley in America where particularly on passage it is commonly found well inland. The adults in winter are rather uniformly grey above and whitish below, more uniform and much whiter than Golden Plovers (*Ch. apricarius*) as can be seen in plate 67, lower. The same picture shows the characteristically rounded head with the dark eye standing out in the centre, and the erect posture with head held high that can often be seen as one approaches a flock of Grey Plovers. By contrast, plates 66 (lower) and 67 (upper)—which seem to be of immature birds with streaked breasts and more contrasted upper-parts—show the dejected, hunched up attitude which is characteristic of this species when unsuspicious and at rest. In winter this bird is, of course, easily separable from the Golden Plover by marked features which do not show in these photographs—the black axillaries, the whitish wing-bar, the white upper tail.

I.J.F.-L.

PHOTOGRAPHS OF ORNITHOLOGICAL RESERVES

Photographed by ERIC HOSKING, J. K. ST. JOSEPH,
E. M. NICHOLSON, P. W. SANDEMAN and
AEROPHOTO NEDERLAND

(Plates 68-72)

THE photographs in this issue illustrate some aspects of bird life affecting the choice and management of nature reserves. Plate 68, taken at the Naardermeer in Holland by unauthorized aerial photography in evident violation of the peace of an important Spoonbill (*Platalea leucorodia*) breeding colony clearly brings out several important points. First, Spoonbills can breed in densely inhabited countries only where they can be assured (as they have been at this and two other places in the Netherlands) of strict and effective protection against disturbance, including that of inconsiderate bird-watchers. It is not impossible that the Spoonbill, like the Avocet (*Recurvirostra avosetta*), might regain its British breeding status if real quiet could be provided at a suitable nesting and feeding area, but there is virtually no hope of sporadic establishment like that of the Little Ringed Plover (*Charadrius dubius*). A second point is the curious intermingling of Cormorants (*Phalacrocorax carbo*) with Spoonbills. Where strict protection is afforded to one species of colonial breeder others quickly take advantage of it. This has occurred with Sandwich Terns (*Sterna sandvicensis*) and Black-headed Gulls (*Larus ridibundus*) at Havergate, and with Lesser Black-backed (*L. fuscus*) and Herring Gulls (*L. argentatus*) and Eider Ducks (*Somateria mollissima*) at Walney Island. Sometimes the immigrants are welcome, sometimes neutral, sometimes definitely harmful to the objects of the sanctuary, while in certain cases much study and experiment are needed to find out their effects which may differ according to numbers and food supply. We hope to publish shortly an account of the investigations carried out at Dungeness on this problem, about which there are more opinions than facts. Reserves to protect colonial species tend to become multispecific after a few years' success, and to develop a disturbing inherent instability, as well as being exposed to external dangers. Ideally there should always be several neighbouring alternative sites as an insurance, but this is not always possible.

Finally, Naardermeer illustrates the great difficulties of water-level control and habitat management. The birds themselves alter the soil and vegetation sometimes in ways inconsistent with their future occupancy, but more important is the natural tendency for such swamps or fens to proceed through ecological succession to alder-carr and then to dry woodland, unless this process is artificially arrested. Any lowering of the surrounding water-table makes maintenance of such conditions more difficult, or even impossible.

Plate 69, taken from a much greater height, shows Havergate Island and Orfordness, together forming the Orfordness-Havergate Nature Reserve, Suffolk. The picture shows the almost unique advantages of Havergate for maintaining permanent tracts of saline pools and banks for foraging by Avocets, coupled with strict control of human disturbance. The provision of the right ecological conditions comes first, although it must be supplemented by strict protection. The shingle spit, although ideally fitted for, and long occupied by, breeding terns has at present only a small population owing to human disturbance; the object of management policy is to build up the numbers.

The photographs (plate 70) of the "wheel" for Ospreys (*Pandion haliaetus*) on a North of Scotland Hydro-Board reservoir and of wooden nest-boxes for Goldeneyes (*Bucephala clangula*) illustrate recent enterprising attempts made through the Scottish Rare Birds Committee to induce extinct or new breeding species to colonise, through the provision of attractive nesting-quarters. In both cases Continental experience has been drawn upon in the design.

The next illustration (plate 71, upper) is of the "Tree-Hide" at Minsmere, Suffolk. This is a good example of the ingeniously designed and well placed types of observation post used by the Wildfowl Trust and the Royal Society for the Protection of Birds to enable bird watchers to watch rare birds without disturbing them. It appears that such structures have been brought to a more advanced stage of development in Great Britain than in other countries, but there is still much room for improvement and wider adoption of the idea.

The apparently dreary landscape of dead trees standing in water (plate 71, lower) illustrates a feature of American reserve management which arose by accident but which has proved outstandingly attractive to a large variety of interesting birds. A bank thrown up across a low valley converts a tract of woodland into a shallow artificial lake, resembling a beaver dam on a much larger scale. The trees die and their trunks are perforated by woodpeckers and other species, while Tree Swallows (*Iridoprocne bicolor*), Wood Duck (*Aix sponsa*) and so on nest freely in the holes and other birds in the forks. A Bald Eagle's (*Haliaeetus leucocephalus*) occupied nest can be made out in the middle background of this picture taken at Montezuma Wildlife Refuge, New York State, in May, 1955. The dead trees also attract many ducks to feed and rest on windy days in the sheltered water among them, or on floating logs where they are safe from most predators.

The other American Wildlife Refuge illustrated (plate 72, upper) is St. Marks in Florida, a wintering haunt of vast numbers of geese and ducks, which have been greatly increased by the provision of artificial waters and marshes—an unemployment relief work of the pre-war Roosevelt regime. The warden is seen gathering some of the vegetation most favoured as duck-food, called water celery. Aerial spraying with herbicides is used to discourage aquatic plants



Niell Rankin

MALE GREY PLOVER (*Charadrius squatarola*): ALASKA, 1950
 In summer plumage this is a very striking bird, with its black under-parts set off by the white band down the side of the neck and the light colour of the rest of the head; the mantle and wings are speckled greyish-black and white. As with many waders both sexes incubate (see page 538).



Niall Rankin

FEMALE GREY PLOVER (*Charadrius squatarola*): ALASKA, 1950

In summer plumage the female is usually less white above and browner below than the male, with the dark under-parts much flecked with white, but this bird seems rather poorly marked.



R. P. Bagnall Oakley

GREY PLOVER (*Charadrius squatarola*): NORFOLK, WINTER 1951

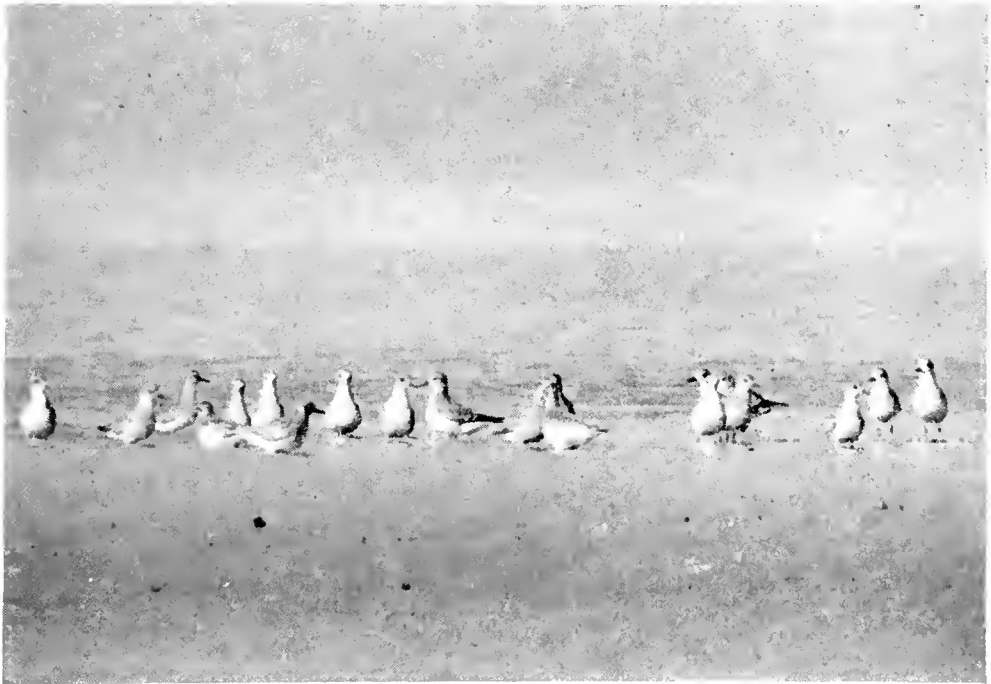
Adults in winter (see plate 67) are largely white below, but young birds in autumn have the side of the head and the throat and breast more streaked with brown; at the same time such immatures have the upper-parts more contrasted (see page 538).



B. Metcalfe

GREY PLOVER (*Charadrius squatarola*): SUSSEX, WINTER

To judge from the streaked flanks and the contrasted upper-parts this seems probably a young bird (cf. plate 66, lower). This plate also illustrates well the rather dejected, hunched-up attitude which is characteristic of Grey Plovers at rest.



S. Bayliss Smith

GREY PLOVERS (*Charadrius squatarola*): SUSSEX, WINTER

This photograph, where the birds are on the alert, shows the characteristically rounded, plover head, with the eye forming a dark spot right in the centre. Grey Plovers look rather whiter below in winter than Golden Plovers (*Ch. pluvialis*) (see page 538).



Aerophoto, Nederland

THE NARDERMEER, HOLLAND: SPOONBILLS (*Platalea leucorodia*) AND CORMORANTS (*Phalacrocorax carbo*)
 One of three nature reserves in Holland where the Spoonbill is given full protection against disturbance, the Nardermeer illustrates the way in which the peace and quiet afforded to one species is taken advantage of by others, in this case Cormorants (see page 539).



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J. K. St. Joseph

ORFORDNESS-HAVERGATE NATURE RESERVE, SUFFOLK

Havergate is the double island two-thirds up the picture. This photograph shows its almost unique advantages for maintaining permanent tracts of saline pools and banks as foraging areas for Avocets (*Recurvirostra avosetta*). The shingle spit has at the moment only a small population of terns because of human disturbance (see page 540).



P. W. Sandeman

"OSPREY WHEEL" AND GOLDENEYE NEST-BOXES: SCOTLAND

Two examples, based on Continental methods, of attempts made in Scotland to induce colonization by new breeding species: the upper shows a type of nesting-site that may encourage Ospreys (*Pandion haliaetus*); below are two kinds of nest-boxes put up for Goldeneyes (*Bucephala clangula*) (see page 540).



Eric Hosking

THE "TREE-HIDE" AT MISSMERE, SUFFOLK

An example of the ingeniously designed observation posts used by the Royal Society for the Protection of Birds to enable rare species to be watched without disturbance (see page 540).



E. M. Nicholson

MONTENZUMA WILDLIFE REFUGE, NEW YORK STATE, U.S.A.

This illustrates a feature of American reserve management which has proved very attractive to many birds: a bank thrown up across a low valley converts a tract of woodland into a shallow lake. A Bald Eagle's (*Haliaeetus leucocephalus*) nest is just visible above the skyline, to the right of the tallest tree (see page 540).



E. M. Nicholson

ST. MARK'S WILDLIFE REFUGE, FLORIDA, U.S.A.

A wintering haunt of vast numbers of geese and duck, which have been greatly increased by the provision of artificial marshes and by the propagation of favoured aquatic plants (see page 540).



E. M. Nicholson

NEST-BOX EXPERIMENT: UNIVERSITY OF WISCONSIN, U.S.A.

An experiment which has shown the possibility of building up larger and more varied bird populations by the provision of additional nest-sites. A block of 20 evenly spaced boxes is illustrated, with a Tree Swallow (*Iridoprocne bicolor*) on one in the foreground (see page 541).

useless for this purpose, while plants eagerly eaten by duck are systematically propagated, sometimes by aerial broadcasting of seed on suitable waters, or by ploughing and planting patches of land with crops to be left standing so as to be eaten by geese. An artificial mere with the similar object of attracting numbers of waterfowl has recently been constructed at Wicken Fen, Cambridgeshire.

The final picture (plate 72, lower) shows an experiment on the University of Wisconsin Campus to test possibilities of increasing breeding bird populations by large-scale provision of nest-boxes on open sites. A block of 29 evenly spaced nest-boxes is illustrated, and a Tree Swallow is visible on top of one in the foreground, while others near were occupied by a Bluebird (*Sialia sialis*), a House Sparrow (*Passer domesticus*) and a House Wren (*Troglodytes aedon*). The boxes, made from old food cans, cost only 7 cents each, or about sixpence, and are designed to enable the occupants to be readily caught for inspection when required. Such experiments have indicated great possibilities of building up larger and more varied bird populations by providing additional nest-sites for species whose numbers are limited by lack of them. E.M.N.

NOTES

Goshawk in Middlesex.—On the afternoon of 20th March 1955 B. P. Pickess, I. G. and K. Johnson and I were standing beside the River Colne at Harefield Moor in Middlesex, when a raptor was seen approaching at a height of 200-250 ft. from the Buckinghamshire side of the river. When first seen it had the appearance of a large Peregrine (*Falco peregrinus*), being considerably larger than Woodpigeons (*Columba palumbus*) in the air at the same time. As it flew over in good light, the typical *Accipiter* conformation became apparent: the tail was long and showed no falcon-like taper; the wings were rounded and distinctly fingered. There was no moustachial stripe. The breast and under-wing appeared dark buff and variably flecked with a darker colour. On the under-wing the flecking appeared to be more symmetrical, an approximation to the more clearly defined barring on a Sparrowhawk (*A. nisus*). The tail was darker than the body and seemed to be barred. Upon sighting us the bird banked and moved off its course, having been observed closely for about 12 seconds. The flight was direct and powerful, and the bird was seen to glide momentarily as it moved into the distance. It was immediately decided that this bird was a Goshawk (*A. gentilis*) and subsequent reference to text-books and skins confirmed this and pointed to an immature.

On 24th April the same party of people were again given fine

views of an immature Goshawk in the same area. The bird was flushed from a copse and flew past us some 15 yards or so away.

J. W. DONOVAN

[Since Goshawks are much used in falconry, and since there must therefore always be in this country a few Goshawks that have escaped from captivity, we approached Mr. G. H. Ivon Jones and Mr. W. Rutledge, respectively Hon. Secretary of the British Falconers' Club and former Editor of *The Falconer*, with a view to obtaining a statement on the situation. They both assure us that any Goshawk in immature plumage can almost certainly be regarded as a genuinely wild bird if it can be seen that it is not wearing jesses. In their opinion a Goshawk would not be able to get rid of its jesses in under two years at the very least. In fact, it would almost certainly be rather longer than this, since Goshawks do not peck at their jesses in the same way as do certain falcons, so that the only way in which the birds would be likely to lose them would be through the rotting of the leather. Every falconer puts on jesses the moment he receives an eyass, even if its feathers are not yet fully grown. Consequently, the only possibility of an imported immature bird being without jesses would be one that had escaped from a Zoo. The matter is more difficult where an adult is concerned since a trained bird might, of course, be at large for years.—Eds.]

Red-footed Falcon at Fair Isle.—A Red-footed Falcon (*Falco vespertinus*), first seen at Fair Isle on 4th June 1955, was trapped and ringed on the 8th, and was last seen on the 12th. When found on the afternoon of the 8th it was working along a line of fencing-posts, using them as lookout points for insect prey, in the manner of a shrike. Its frequent sallies from the posts usually took it to not more than a dozen feet from the fence, and this habit seemed to offer a fair chance of catching the bird with a clap-net operated from a hide, using meal-worms as bait. Twice during the next hour the bird passed the net without showing any interest, but on the third occasion it descended and was caught. Whilst watching its movements we noted that small birds showed absolutely no fear or mistrust of the small falcon, and indeed a pair of Meadow Pipits (*Anthus pratensis*) perched alongside it several times. Its short flights to and from the ground were slow and ponderous, rather Cuckoo-like, but on the few occasions when it covered a fairly long distance it showed more dash and vigour. It was seen to hover for several seconds in the manner of a Kestrel (*Falco tinnunculus*) and sometimes ran lightly over the ground. It was exceedingly tame, permitting close approach, its only reaction being to bob the head suspiciously.

It was clearly a first-summer male with a good deal of juvenile plumage remaining on the wings and underparts. The head and nape were dark slate-grey, the mantle, sides of neck and upper

breast a slightly paler uniform grey. The dark brown primaries contrasted with the paler coverts, and extended slightly beyond the tail, which was evenly barred buff and brown above and below. The lower breast was whitish lightly streaked darker, and the vent, under tail-coverts and "trousers" a warm rufous colour.

In the hand it was seen that whilst the head and much of the upper-parts were slate blue as in the mature adult, some chestnut-edged juvenile feathers remained among the scapulars and on the lower mantle. The tail was completely juvenile and very worn. The primaries, secondaries and primary-coverts were new and probably also the outer greater coverts, the remainder of the wing belonging to the earlier plumage. The pale bluish-grey breast had an admixture of unmoulted feathers and the belly plumage was entirely juvenile.

The soft parts were as in the mature bird: the bill was bluish horn at the tip, becoming deep orange close to the cere, and this, with the eye-rims, was reddish-orange. The legs were also reddish-orange and the claws pale brown. The wing projected about a quarter of an inch beyond the tail-tip. The bird weighed 136 gm. A number of mallophaga and one hippoboscoid fly, a ♂ *Ornithomyia fringillina* Curtis, were collected in the "Fair Isle Apparatus" (cf. *antea*, vol. xlvii, pp. 234-5).

The bird was colour-photographed prior to being released, and was seen by Mrs. Helen Fiddes, Mrs. K. Williamson, Miss Anna Burt and Mr. Alex M. Maekenzie.

KENNETH WILLIAMSON and VALERIE M. THOM

Little Ringed Plovers breeding in Leicestershire.—Two nests of Little Ringed Plovers (*Charadrius dubius*), each containing a clutch of four eggs, were found at a gravel pit in north Leicestershire in 1955; the first nest was discovered by L. A. Brown on 11th May, the second by P. H. Gamble on 21st May. All the eggs hatched, and it is believed that four young reached the free flying stage. Second clutches were laid in about the same positions, each nest again having four eggs. All eggs hatched, and two young from the first nest, and one from the second, were present about 14 days after hatching. Observations suggest that during the breeding-season only three adults were present, presumably two females and one male.

These are the first breeding records for the county. Earlier in the spring a pair of Little Ringed Plovers had taken up territory at Eye Brook Reservoir, but after two or three weeks had left the site.

R. A. O. HICKLING

[As previously stated (*antea*, p. 177) we shall continue to publish any breeding-records of Little Ringed Plover which represent the colonization of new counties. The Leicestershire case has additional interest in that strong evidence of polygamy was obtained.—EDS.]

Curlew nesting in Co. Armagh.—The statement by Kennedy, Rutledge and Scroope in *Birds of Ireland* (1954) regarding the breeding of the Curlew (*Numenius arquata*) in Co. Armagh is not correct. The species has, in fact, been a regular nester in this county since 1948, during which year I found a nest containing four eggs in a meadow quite close to the village of Richhill. Unfortunately the eggs failed to hatch, but since then the species has increased in this locality, and I myself have records of 11 nests. In 1955 five pairs were present. LOUIS NESBITT

Curlews at 4,500 feet.—On 29th July 1955 Pilot-Officer A. L. Carey, R.A.F., on a flight over Northamptonshire, flew into a flock of about six Curlews (*Numenius arquata*) at 4,500 feet. One of the birds was later found impaled on the aircraft. The wind was from the N.E., at 10 knots, and the birds were flying above a 1,000 feet layer of strato-cumulus whose ceiling was 3,000 feet.

There are few observations of waders flying at such a height, so that isolated records like this seem worth noting.

C. DOUGLAS DEANE

[In his paper on "Aircraft observations of birds in flight" (*antea*, pp. 59-70), Capt. K. D. G. Mitchell is able to give only two personal records of waders flying at over 4,000 feet. Both referred to parties of Lapwings (*Vanellus vanellus*), at heights of 4,200 feet and 6,000 feet. On the other hand, Col. R. Meinertzhagen (*Ibis*, 1920, pp. 923-924) quotes a record of a Green Sandpiper (*Tringa ochropus*) flying at 12,000 feet; and fourteen cases of Lapwings between 2,000 and 8,500 feet, the majority between 5,000 and 6,000 feet.—EDS.]

Peculiar behaviour of Green Sandpiper.—As no further examples of the peculiar behaviour of Green Sandpipers (*Tringa ochropus*) recorded by Mr. T. C. Gregory (*antea*, vol. xxxvi, p. 181) and of a Wood Sandpiper (*T. glareola*) noted by Mr. C. A. White (*antea*, vol. xxxvii, p. 19) seem to have been witnessed, it may be of interest to report that I watched a Green Sandpiper perform similar antics at the gravel pits, Frampton-on-Severn, Gloucestershire, on 25th August 1955.

It was noted as "flying into the water from about 2 ft. above, jumping out, splashing and flapping in again and moving along as if caught by one leg; and finally it stood in the water and made exaggerated bathing motions with its wings". After this performance it wagged its tail and preened for a while, but within about two minutes it repeated the behaviour, including the preening, before beginning to feed. The excited actions reminded me of the occasional mad dashes of a party of ducks on and under the water. No call was heard, and two Greenshanks (*T. nebularia*) feeding a few yards away did not join in the excitement. SYBIL M. BUTLIN

Sanderling perching on roof and feeding by road-side.—Mr. H. S. Semple and the writer had the most unusual experience, on 17th

May 1955, of finding a Sanderling (*Crocethia alba*) perching, about twelve feet above the ground, on a flat and single-storied building on the outskirts of Bath, Somerset. The bird, which had retained its winter plumage, remained quite still at first, but as we drew closer it ran with rapidity across the fairly smooth roof's surface. It took flight and called incessantly as it alighted on a metalled road near-by. The bird then ran along the road but stopped every so often apparently seeking insect food from the grass verge. It fed in this way for some time, but we found that whenever it was approached too closely by groups of people it would return to its high perch until they had gone.

BERNARD KING

Winter habits of Ruffs.—Some observations on the winter habits of the Ruff (*Philomachus pugnax*) may be of general interest in view of the recent note on "Ruffs wintering in Cambridgeshire". I have considerable experience of these birds over many years in the Trent Valley, Nottinghamshire, where it is numerous as a passage migrant and winter resident; in Cambridgeshire, particularly around the sewage-farm; and on Frodsham Marsh, Cheshire.

Adult birds appear early, frequently in the first days of July, and there is often much movement during August, but peak numbers normally occur with influxes of young birds in the last week of August and early days of September. It is probable that a large proportion of these birds remain to winter. I have many records of individual birds, recognizable by peculiarities of plumage or injury, remaining in an area throughout the autumn and winter. Again, winter flocks are often much the same numerically as those of late autumn, and there may be no obvious exodus.

During July, August and early September, I have found birds most numerous on very soft or semi-fluid mud, with or without covering water, and have watched them feeding on earthworms (*Lumbricus*), rat-tailed maggots (*Cristalis*), *Chironomids* and other unidentified grubs, as well as taking flies over the surface. In all three localities a most interesting phenomenon has been a more or less sudden and complete change of habitat during late September or October, birds moving to meadows and plough and consorting with Lapwing (*Vanellus vanellus*), Golden Plover (*Charadrius apricarius*) and Curlew (*Numenius arquata*), even fighting and roosting with these species. On the Nottingham Sewage Farm I have examined the mud of the most recently favoured feeding area of the species, immediately after the change. Macroscopically, there was a relative sterility of the surface mud.

With the advent of hard weather, birds frequently return in flock to areas of soft mud or shallow pools, but even in snow I have watched them feeding around cattle-dung and mole-hills in the fields. The adaptation of the species to winter conditions in Britain is well shown in that birds remained in strength in the Trent Valley in the most severe winters of 1944-45 and 1946-47, flocks of between 60 and 80 birds being seen.

R. J. RAINES

Notes on the display of the Grey Phalarope.—The following notes on the display of a pair of Grey Phalaropes (*Phalaropus fulicarius*) were made on 30th June 1955 at a small lochan at the mouth of the Sassen Valley in Spitsbergen. In addition to the pair under observation, three females of the same species were scattered along the shore of the lochan and they almost certainly had mates sitting on eggs in the immediate vicinity. For some time the pair worked their way backward and forward along one stretch of the shore, the female following close behind or alongside the male and both birds keeping up a constant chirruping conversation. The female swam with her tail dipped, the front part of her body raised and her feathers puffed out so that she towered above her mate and looked even larger than usual. Every now and then she raised herself a few inches above the water with her body horizontal and tail depressed and almost touching the surface and "marked time" with her wings for 1-2 seconds, making a startlingly loud wickering noise. After each of these performances the female would relapse on to the water looking even more broody than ever, the white-edged feathers on her back standing out like spikes. The other females were much interested in what was going on and were constantly swimming up for a closer look. On one occasion one of these birds flew over and struck the female of the pair twice on the head. Both birds of the pair frequently flew off to chase away these intruding females. If the female was on land when the male flew off on one of these sallies, he would fly back to her and half crouch under her breast as if for protection; if she was on water, he would land close to her and swim up to her and rub his breast against hers—a most charming sight and very reminiscent of the display of a pair of Great Crested Grebes (*Podiceps cristatus*). On one such occasion, when excitement was obviously beginning to mount, the male interrupted this breast-rubbing with a quite astonishing bout of frenzied bathing and preening, putting his head right under the water and then suddenly emerging for another brief spell of breast-rubbing. The birds came to land, where the male spent a minute or so preening quite soberly. Then without any preliminaries the male flew up and mated, hovering above the female's back for perhaps 3 seconds while the chirruping conversation slowed down to a harsher crooning. The female darted off to chase away an intruder and both birds preened together for a few minutes before flying away from the lochan. These notes covered a period of about 20 minutes (and jolly cold ones they were, too).

D. G. ANDREW

Ivory Gull in Sussex.—On 19th November 1954, I saw an adult Ivory Gull (*Pagophila eburnea*) in the lower Cuckmere valley, Sussex. The bird was first noted on mud by the river with other gulls. On being put up it joined a flock of gulls in a field by the old channel of the river. Eventually it flew off alone up the valley

and was not seen again. The following particulars were noted. Compared with Black-headed Gulls (*Larus ridibundus*) and Common Gulls (*L. canus*) it was about the size of the latter. On the ground it had a rather peculiar puffed-out appearance. The whole plumage was pure white. The legs were short and black and the bill also seemed rather short. The colour of the latter was not fully made out, as when I had my nearest view (across the width of the river) the bird had its back towards me. I was, however, able to see some yellow on it. The eye appeared blackish. There had been several days of variable wind with fog at night, and many gulls were present.

D. D. HARBER

Mediterranean Black-headed Gull in Sussex.—On 3rd August 1955, I saw a Mediterranean Black-headed Gull (*Larus melanocephalus*) at Langney Point, Sussex. The bird, which from the black tips to the outer primaries I take to have been in second-summer plumage, was watched for about 25 minutes at ranges of never more than about 100 yards and sometimes of less than 10 yards. The following particulars were noted. Head, black except for a few small patches of white, the black extending some way down the back of the neck. Upper surface of wing, grey except for black tips to outer primaries, some black on the outer webs of these, a small black spot near the carpal joint, white trailing edge and a whitish line across the wing-coverts. This latter feature which I often notice in gulls at this time of year, is no doubt a sign of moult. No black on under surface of wing except at tips of outer primaries. Tail, white. Bill and legs, red, a darker shade than those of Black-headed Gulls (*L. ridibundus*) present. Bill, distinctly heavier than that of latter species. A rather larger and more heavily built bird than a Black-headed Gull but wings relatively shorter and more rounded. At rest on the water these projected noticeably less far beyond the tail than those of the Black-headed Gulls alongside it.

D. D. HARBER

Mediterranean Black-headed Gull off the Isle of Wight.—On 5th August 1955, from the deck of the U.S. liner "America", when between one and two miles from the east foreland of the Isle of Wight and perhaps five miles from Southsea, at approximately 3 p.m., I saw an adult Mediterranean Black-headed Gull (*Larus melanocephalus*). The bird appeared from the north, meeting the boat, and as it drew near I took it to be the first Black-headed Gull (*L. ridibundus*) from the English coast. Quantities of Herring Gulls (*L. argentatus*) were already following in our wake. However, as soon as I got my field-glasses on to the bird, I noticed that its primaries lacked the dark tips of the Black-headed Gull and a moment later I saw that the under-side of the wing was not black, thus ruling out Little Gull (*L. minutus*). The hood was largely dark, but there was some white round about the bill; the bird was evidently acquiring winter plumage already, as were most

of the Black-headed Gulls seen half an hour later, as we approached Southampton. The Mediterranean Gull quickly joined the Herring Gulls in our wake, and then I think it settled on the sea. I had it in my binoculars for perhaps twenty seconds. Perhaps I should add that I have frequently watched *L. melanocephalus* from on board ship in the Mediterranean.

H. G. ALEXANDER

Coition by Sand Martins on the ground.—At Chew Valley Reservoir, Somerset, on 13th May 1955, a number of Sand Martins (*Riparia riparia*) frequently alighted on a disused road which had become coated by a thin layer of red earth. The martins spent much time apparently picking up insects or possibly fine grains of unidentified matter but numerous attempts were also made by some of the birds still in flight to settle on the backs of some of those on the ground. The behaviour was thought by the writer to be attempted copulation with presumed females, but the latter when molested usually moved to another part of the road or instead immediately took flight. Successful coition did, however, occur on three occasions when hovering Sand Martins alighted on the backs of females on the ground. The latter quivered one or both wings, with head turned sideways and slightly upwards, whilst the males kept their balance by continuous wing-flapping.

The writer can trace one isolated instance of Sand Martins mating as they rested on the ground (*antea*, vol. xxxix, p. 282) and another of their attempting to do so (*antea*, vol. xl, p. 20). It is thought that perhaps the behaviour may be of sufficient interest to place on record, but no doubt the details as described above are a common practice with Sand Martins.

BERNARD KING

[R. A. O. Hickling, who with F. A. Bak has been making a special study of this species, comments as follows:

“Sand Martins normally settle on the ground during a brief phase (lasting a day or two only) of the breeding-cycle. This is the period during which the nest-cavity is lined with grasses and straws. The apparent picking up of minute and invisible objects seems to precede, and merges into, the stage of picking up the actual grasses. I have not seen coition in connection with this activity, but coition is rarely seen at all. In four years' study my colleague F. A. Bak and myself have recorded coition on two occasions only (although several birds were involved each time) and we have a further record of attempted coition by a pair of birds on a power cable about half a mile from the colony. Our observations, indeed, suggest that copulation takes place mainly in the nesting burrow. However, D. Stoner (*Studies on the Bank Swallows in the Oneida Lake region*) refers to copulation at the cliff face, in the air, and on the ground at the foot of the cliff after the pair had tumbled down from the nest-hole in an aerial tussle. A similar observation is quoted by A. C. Bent (*Life Histories of North American Flycatchers, Larks, Swallows and their Allies*). Of the two previous records quoted in Mr. King's note, only the

first was in conditions comparable to those described by him. After the breeding-season and on migration Sand Martins, with other Hirundines, quite commonly settle on the ground, and attempted copulation there (presumed to be by young birds) has been recorded both in Britain and America."—EDS.]

Unusually sited Nightingale's nest.—In my garden at Farley, in Wiltshire, a partly built Nightingale's (*Luscinia megarhynchos*) nest was found amid the bare stems of a blackthorn bush on 7th June 1955. The nest very slowly took shape and, although lop-sided to an obvious extent, held its first egg on 11th June. This was definitely a very late date. In due course four eggs were laid and incubated and three young flew (the fourth egg was addled). The remarkable thing about the nest was that it was supported 3 ft. 8 in. (to top of nest-edge) above the ground in a substantial fork in leafless blackthorn stems adjacent to dense, tall-growing bramble. Some feet above the nest was a canopy formed by the branches of a big hazel, but it was entirely open to view from one flank. Actually, it was easy from fifteen yards to see the old birds creeping through the cover to the nest when feeding young.

F. C. R. Jourdain wrote in *The Handbook* that Nightingales nest "generally on or close to the ground, occasionally a few feet above it". I have found numbers of Nightingales' nests in Britain, France and Spain, but none before this more than, at most, a few inches above ground.

W. M. CONGREVE

[On 27th May 1894 I found a Nightingale's nest containing five eggs at Newnham, Cambridgeshire. It was built on the top of a wooden paling fence separating a public footpath from a thick hawthorn hedge, which was several feet higher than the paling and afforded the nest a certain amount of shelter and concealment. The nest was five feet above the ground.—N.F.T.]

Voice of a fledgling Robin.—From 27th June to 11th July 1955, inclusive, my wife and I reared a fledgling Robin (*Erithacus rubecula*). When it was first brought to us, down was still attached to the head-feathers; the tail had not started to grow; it could not fly; and was estimated to be about ten days old. For the whole fifteen days the Robin lived freely inside our house, in whatever room we occupied, and at night roosted in our bedroom, for the most part on top of a lampshade. It needed feeding every 15-20 minutes or so from about 0700 hours to 2300 hours and was fed almost exclusively on earthworms. Since the Robin was under particularly close observation, it may be of interest to place on record the following notes on voice.

Food call. When requiring food the fledgling called continuously a thin penetrating "ddeep", and only ceased when its appetite was satisfied. This note, therefore, was the commonest call, and was repeated every 15-20 minutes in the period mentioned above.

Feeding note. While being fed it gave the tremulous call (as

reecorded in *The Handbook*). This I wrote down as "jeer-jeer-jeer".

Sub-song. On 3rd July the Robin was about 17 days old. The down attached to the head-feathers had nearly gone; the tail was half an inch long; and it could fly weakly. From and including this date, until it was released on 11th July, either my wife or myself heard it sing daily. Although I cannot recall having heard the sub-song of an adult Robin, the warble of this fledgling was what I should have expected of the former. The sub-song seldom lasted for more than a minute or two at a time.

Ticking note. The only other note heard—on not more than three occasions in all—was an impatient "si-tie-tie" given by the Robin when moving about the floor of a room. E. H. GILLHAM

Icterine Warbler on Skokholm.—On 31st August 1955, during a heavy passage of Whitethroats (*Sylvia communis*), an Icterine Warbler (*Hippolais icterina*) was self-caught in the largest Heligoland trap on Skokholm, Pembrokeshire. It was judged from the rather brown upper-parts, and the brown fringes to the rectrices and remiges, to be a juvenile. Wing 76.5 mm. curved, 78 mm. straight. Wing formula: 1st primary equal to longest primary covert, 3rd longest, 2nd 4 mm. shorter, 4th 1 mm. shorter, 5th 5 mm. shorter, 6th 9 mm. shorter, and 7th 12.5 mm. shorter; 3rd and 4th emarginated. This is the first record for Skokholm, and apparently also the first for Wales. PETER DAVIS

Barred Warbler in Orkney in spring.—On 30th May 1955 I saw a Barred Warbler (*Sylvia nisoria*) at Raekwick, on the island of Hoy, Orkney. The bird was disturbed at close range out of one of the few bushes in the area and then skulked among the others not far away. It was a large-looking warbler, appreciably bigger than a Blaekeap, and in flight the longish tail showed white on the outer feathers.

Seen through binoculars, the bird was a brownish-grey above, the wings rather browner, with white margins to the wing coverts, which were easily seen. The under-parts were whitish and with rather indistinct barring. In view of this and the browner rather than greyer tone of the back, I believe the bird was a female. The eye showed up prominently as a pale yellow and the legs as a pale brown. The bird was silent all the time I saw it.

The wind had been from the east and south-east for the previous five days with typical anticyclone weather, which coincided with an influx of other Continental migrants to the islands.

JEFFERY G. HARRISON

Unusual behaviour of Lesser Whitethroat.—W. D. Ryder's note (*antlea*, p. 234) on a Great Tit (*Parus major*) hopping up and down a vertical tree trunk has reminded me of similar unusual behaviour I observed in the Lesser Whitethroat (*Sylvia curruca*).

On 26th March 1946, in the Zoological Gardens, Giza, Egypt, I was watching a Lesser Whitethroat feeding in the normal way among low vegetation near the base of a tall tree. After a while it dropped to the ground, then flew onto the trunk, alighting about one foot from ground level. Next it proceeded to jerk vertically up the trunk, covering a distance of two to three inches with each jerk and then stopping to examine or peek at the bark, presumably obtaining some form of insect food (possibly ants); altogether the bird covered a distance of three to four feet in about a minute. It then flew into the vegetation it had previously left and continued feeding normally.

On no occasion did I see the tail or the under-parts touch the trunk; the legs appeared rigid and its whole performance gave it an attenuated and unusual appearance. C. A. WHITE

Bonelli's Warbler in Dorset.—At 09.35 G.M.T. on 29th August 1955, a small warbler was caught in one of the Heligoland traps at Portland Bill, Dorset. At first its identification was not at all clear, but eventually it was identified as a Bonelli's Warbler (*Phylloscopus bonelli*). Detailed descriptions were made independently by Messrs. K. V. Edwards and Alan Till, who kindly came and examined the bird, and by myself.

When the time came to release the bird, it was allowed to find its way out of a small cage into a bramble bush. Here it was possible to watch it feeding and taking short flights. Later in the same day the bird was found on a barbed-wire fence several hundred yards away and was watched in the evening sunlight catching insects in a fashion similar to that of the commoner *Phylloscopi*.

It is considered unnecessary to mention the account of the plumage made when the bird was examined in the hand, as this is only a more detailed record of the field-description. Full supporting evidence, however, has been submitted to the Editors.

Laboratory description. Weight at time of capture, 7.4 gm. Wing formula: 3rd to 5th primaries emarginate; 3rd longest; 2nd, 5 mm. shorter (approx.=6th); 4th, 1 mm. shorter (=5th); 6th, 4 mm. shorter. Wing length, 65.5 mm. (straight and flattened). Legs, brownish-horn (or dark horn), darker than those of Willow Warblers (*Ph. trochilus*) trapped about that time. Iris, very dark brown (or black with slight reddish tinge); pupil, black.

Field description. Sides and all top of head and mantle, a smooth greyish-brown. The greenish tinge noticeable in the hand was hardly discernible in the field. A greenish-yellow patch on the wing was very marked, formed by the edgings to the primaries and secondaries. The yellowish rump was more obvious in the field than in the hand, especially when the bird raised its wings or took short flights. The whole of the under-parts was a pale dirty-grey white, lacking any tinge of yellow or brown except at the vent and under tail-coverts, which were of a warmer shade. The

call note sounded like "hu-eet" in the cage; in the field it was considered not to be quite so drawn out as that of Willow Warbler or Chiffchaff (*Ph. collybita*).

The date (29th August) of the occurrence of this bird, the third British specimen, is interesting in being so close to the time of the year of the two previous records (Skokholm, 31st August 1948; and Lundy, 1st September 1954). W. H. TUCKER

Starlings disabling Swifts.—On or about 15th May 1955 relatives of mine at Ashton Keynes, Wiltshire, saw a Starling (*Sturnus vulgaris*) attack a Swift (*Apus apus*) under the eaves of a house and bring it to the ground. It was there joined by a second bird and the two of them proceeded to peck the Swift with considerable ferocity. The Starlings were then driven away by my aunt, Miss Clay, but the Swift was so badly injured that it had to be destroyed. Later in the day a second Swift was found in the same garden in a similar condition. Both species nest annually on the house in question under loose stone roofing-tiles and this seems a clear case of competition for nesting-sites. *The Handbook* mentions deliberate attacks by Swifts upon birds "up to the size of Starling". C. M. SWAINE

[We showed Mr. Swaine's account to Dr. David Lack, who has for some time been making a detailed study of the Swift. Dr. Lack commented to the effect that there are a number of records of Swifts attacking Starlings, and vice versa. In some of these fights the Starling, and in others the Swift, has proved successful, and though sometimes neither bird is hurt, there are a number of cases where one or other has been severely damaged or killed. Dr. Lack informs us that the subject will be fully discussed in his forthcoming book on the Swift, where he includes some personal records of such fights. At the moment the most important published references to the subject in Britain are in *Zoologist*, 1901, pp. 286-289; *Scot. Nat.*, 1931, pp. 73-78; *Brit. Birds*, vol. xlv, pp. 89-90; and by F. B. Kirkman in *The British Bird Book*, vol. II, pp. 353-361.—EDS.]

Siskins breeding in Hampshire.—On 13th March 1955, while I was walking in one of the enclosures in the New Forest, Hampshire, five Siskins (*Carduelis spinus*) flew from a pine, calling loudly. It is usual to find up to 30 in this area during the winter. Generally they leave by the end of March, but on 9th April a male Siskin was seen in the same place and there were others amongst the pines. On 11th April it was estimated that there were 10-15 Siskins in the area, for the most part flying in pairs, though groups of up to six were seen. There was much activity, the birds chasing each other among the pines, and several males were singing from the top branches and in their display flight.

On each of three visits between 12th April and 9th May, several birds were seen and on the latter date I watched a number of twigs

being collected. Despite prolonged watching, however, no nesting places were noted. On 26th May it was estimated that there were about 15 Siskins in the area. Three females and 2 males were seen collecting and carrying food, which appeared to consist of insects and pine seeds. Two separate pairs of juveniles were watched as they were fed, each by both of their parents. All the juveniles had markedly streaked plumage, as noted by Peter Day in an earlier case of Siskins breeding in Hampshire (*antea*, vol. xlvii, p. 209). On 3rd June a family party of 5 Siskins were seen. The three juveniles constantly begged food from their parents. There seems no doubt from this that at least two pairs of Siskins reared young in Hampshire in 1955.

R. C. HALLOWES

REVIEWS

BIRD NAVIGATION. By G. V. T. MATTHEWS (*Cambridge University Press*, Cambridge, 1955). (Cambridge Monographs in Experimental Biology, No. 3). vii+141 pages, with text figures. 12s. 6d.

THIS is an excellent and very readable short account of a subject in which important advances have been made in recent years. Dr. Matthews is well qualified to discuss the problem, by reason of his own contribution to its experimental study and of his comprehensive knowledge of the relevant literature. He displays a capacity for lucid exposition, in a simple direct style with effective diagrammatic illustration. The result is a clear and compact statement.

The book opens with a summary of the known facts of migration which bear on the particular problem; and this is followed by a statement of the evidence that bearing-and-distance navigation on the part of birds is an actuality. Next there is a critical evaluation of homing experiments, their methods and results; this leads to the evidence for the reality of a type of complete navigation which enables the bird to fly towards a known goal irrespective of its bearing and distance. Thus, in four chapters the problem is set.

The remainder of the book discusses the physical features of the environment which are concerned in navigation, and the sensory equipment needed to react to such stimuli. Successive chapters deal with theories based, respectively, on maintenance of sensory contact with home, on a "grid" derived from the earth's rotation and magnetism, and on one derived from the sun's co-ordinates. Only the last type of theory is left in the field, and the author ends by giving further consideration to the particular form of it known as the sun-arc hypothesis.

The book rightly does not concern itself with the manner in which certain forms of behaviour are inherited, as this is in no way peculiar to the example under discussion; but it does deal

with the part played by learning from experience in developing innate capacities to their full effectiveness.

The problem of bird-navigation is not yet solved, but it has become much clearer than it was not long ago. Anyone who wishes to know how it stands at the present time should read this book.

A.L.T.

A CUCKOO IN THE HOUSE. By MAXWELL KNIGHT. (Methuen, London, 1955). 80 pages. 11 photos. 18s.

THIS is an account of a young Cuckoo (*Cuculus canorus*) which was hand-reared and then kept at liberty until it disappeared in late July. Although the book is written primarily for the layman with an interest in animals there is in it a great deal that will be of interest to the serious ornithologist, particularly the detailed observations on the bird's feeding behaviour. The reviewer feels sceptical in regard to the young Cuckoo's supposed affection for its owner and the evidence given does not suggest anything more than cupboard love and a complete lack of fear. The case of tame parrots, which the author mentions in this connection, is different. These birds normally show an affectionate, and usually long-enduring bond between the male and female of the pair and if a bird such as a parrot, crow or pigeon is conditioned (either by imprinting or by isolation from its own kind) to direct its sexual activities towards its owner it will show him or her the same affection as it would normally bestow on its mate. At the same time the author's statement that some people are "blinded by a desire to emphasize the gulf which exists between humans and other animals" is only too true. The final chapter on how and how not to care for injured or foundling birds should, if widely read by the well-meaning ignorant who commonly take charge of such creatures, prevent a great deal of unnecessary suffering.

D.G.

NORTH WITH THE SPRING. By EDWIN WAY TEALE. (Eyre & Spottiswoode, London, 1955). 358 pages. 35 plates. 18s.

THE notion of chronicling in detail the march of Spring across a continent has probably tempted many writers. This ambitious theme is the subject of Edwin Way Teale's book. It is based on a 17,000 miles zig-zag journey from the Florida Keys to the Canadian border, through some of the most fascinating country in the eastern United States. The author contrived broadly to keep pace with the advance of the spring migrants and the awakening vegetation and animal and insect life, describing his observations *en route*. The opening chapters are full of promise and it is quickly evident that the author's knowledge of his country's natural history, folk lore and climatic vagaries is extensive. He writes with the fluency which we have come to expect from America and the book will undoubtedly please many British readers, whether or not they have crossed the Atlantic. The objective was imaginative

and it is a pity that it becomes increasingly obscured in the later chapters, by irrelevant anecdotes and dissertations, most of which could have been omitted with advantage. Although the book contains much excellent material and is well illustrated, the publisher's statement that it is "of great scientific interest" is not justified. The ornithological observations are disappointingly meagre in view of the great scope offered by the journey, through the richest bird populations in the continent. The author's insistence on the extreme shyness and rarity of the Limpkin (*Aramus guarauna*) in Florida may surprise those who have visited the Everglades, where these birds may occasionally be seen feeding in dykes within a few feet of passing cars. G.R.M.

A HAND LIST OF THE BIRDS OF CARMARTHENSHIRE.

By GEOFFREY C. S. INGRAM and H. MORREY SALMON, C.B.E., M.C. Published by West Wales Field Society from the Red House, Tenby, Pembrokeshire, 1954.

THIS excellent 66-page publication describes clearly and briefly the outstanding points of Carmarthenshire ornithology, including the present and past status of each of the 218 species and 8 subspecies recorded in the county. These are divided into 79 breeding residents, 27 breeding summer-residents, 40 regular visitors and passage-migrants, and 80 occasionals, vagrants or irregular breeders. The authors point out that Glamorgan to the east records 22 more species and Pembroke to the west 42 more, partly owing to their longer coastline and partly because they are better watched. Welsh names are given for nearly every species, but not for the Willow Tit or Cirl Bunting. *B.O.U. Check-List* order is followed.

Among specific items we note an excellent summary of heronries; Eiders recently recorded in winter more often than Scaup; evidence of increase of Buzzards and Kites, and of decrease of Merlins; Black Grouse increasing in north-west; Corncrake reduced to 3-4 breeding pairs; still a pair or two of Golden Plover breeding; Curlew deserting the higher moorlands in favour of valley fields for breeding; increase of Black-tailed Godwits on passage since about 1930; recent scarcity of Common Sandpipers; breeding by Herring Gulls at several points since 1947 or earlier and of Black-headed Gulls only during past 30 years; Turtle Dove breeding in few localities; Barn Owl recovering from 1946-47 winter, and Little Owl also, though "still quite scarce in many districts"; Long-eared Owl and Nightjar extremely scarce and local, both having declined; Wryneck disappeared since about 1904, up to which it was perhaps regular in spring; Woodlarks greatly reduced during past few years; an appreciable decrease of Swallows and House Martins; a breeding Raven population of about 35 pairs, most now nesting in trees; Carrion Crows increasing; Nuthatch spreading; Ring Ouzel "as elsewhere in central Wales to-day . . .

has now virtually disappeared"; Stonechat nearly back to normal on coast but still very scarce inland; Nightingale bred with partial success in 1945; Yellow Wagtail breeding very locally; Red-backed Shrike "probably still a regular summer-visitor"; Goldfinch apparently still increasing and Corn Bunting "as elsewhere in south and west Wales . . . has now practically completely disappeared."

There is a square-bracketed Black-eared Wheatear record for 1951. An error of judgment has probably been made in accepting rather than square-bracketing a 1902-03 record of a wintering Snowy Owl which "used to hawk along the hedges in the evenings and sometimes in broad daylight." This, however, is an exception to the very high standard which the authors generally maintain, a standard which adds greatly to the value of their up-to-date review of an ornithologically little-known county. E.M.N.

LETTERS

THE EFFECTS OF MODEL SCORPION AND LIZARD ON A BIRD-TABLE

SIRS,—I have a small rubber model of a scorpion with its tail turned up and another of a small lizard, each about four inches long and lifelike. In early June 1955 I placed them on the bird-table in my London garden and surrounded them with food. None of the House Sparrows (*Passer domesticus*), Robins (*Erithacus rubecula*), Blackbirds (*Turdus merula*) or Blue Tits (*Parus caeruleus*) would even alight on the table, all expressing fright. I then removed the scorpion and birds came freely to feed, ignoring the lizard completely. Next I took away the lizard and put the scorpion in its place—once again no bird would alight on the table.

I have in my garden a pair of Carrion Crows (*Corvus corone*) a pair of Jays (*Garrulus glandarius*), a pair of Mistle Thrushes (*T. viscivorus*), many Blackbirds, a pair of Robins, a pair of Blue Tits and many Sparrows. In order to attract the larger birds I placed brawn on the table with the scorpion in the centre. A Jay arrived first, but on seeing the scorpion gave one shriek to express extreme shock, flew off to a tree near-by, erecting its crest, flicking its wings and swearing; it was joined by its mate, attracted by the noise; the table was inspected and both Jays were thrown into a state of ecstatic alarm. A Carrion Crow joined the chorus which now closely resembled the mobbing of an owl. Then a Mistle Thrush flew straight for the table and settled there, but it at once gave its fear-note, raised its crown feathers and flicked its wings in protest. The bird was less afraid than either the Crow or the Jays. The chorus was now joined by Robins, House Sparrows and many Blackbirds, all screaming.

At this point I removed the scorpion and put back the lizard.

Both Jays and Blaekbirds eame baek to the table without paying any attention to the rubber model.

Not one of these birds or their remote aneestors ean ever have seen a seorpion before and yet they evineed extreme fear; this from birds who are eredited with less intelligence than man. Many years ago in South Afriea I was training with my eompany—all eookneys—when three of my men found a large seorpion. One of them pieked it up and was stung. They thought it was some wingless loeust. We humans are so anxious to elaim that our intelligence is so vastly superior to that of birds to whom we grant stimuli and reaetions, that it is refreshing to find there are oeeasions when a bird has more sense than man. I have no patience with those who shout "anthropomorphism" at the slightest eomparison between man's and a bird's reaetion to danger, sex, hunger or anything else. Reaetion to a stimulus in a bird is fundamentally identieal with man's reaetion to the same stimulus; detail differs, but our and a bird's reaetion to fear, hunger, sex, etc., are mueh alike in general form, whether in faee of danger, in a restaurant or when eourting.

Having had a lot of trouble with Blaekbirds rooting up my saxifrages and sempervivum in my roek-garden in seareh of wood-lice, I have now plaeced the seorpion on a roek in the roek-garden and the nuisance has abated.

R. MEINERTZHAGEN

ATMOSPHERIC TURBULENCE AND BIRD FLIGHT

SIRS,—In his paper on thermals and bird flight (*antea*, vol. xlviii, pp. 241-253), Mr. G. H. Forster repeats a widely-held fallaeey in his statement "The drift of the air earries the bird with it and the bird is able to aseertain this drift only by its senses of sight or possibly sound". I would like to point out that the anisotropy and asymmetry of the turbulent veloecity fluetuations in the atmosphere provide a simple means whereby a flying bird may, in theory at least, determine the approximate direetion and strength of the wind without referenee to any external objects.

For those unfamiliar with the eonepts involved a brief summary of the properties of atmosferie turbulence may be valuable. The wind (like any other fluid flow of suffieiently large veloecity and seale) does not eonsist of a uniform stream, but is broken up into an irregular system of eddies and gusts, so that the speed and direetion of the stream at any point vary in a random way. For the purpose of analysis the flow may be eonsidered as the sum of a *mean velocity* and a fluetuating *turbulent velocity*. The different eddies and other modes of the turbulent motion interaet statistically with eae other, and the final properties of the turbulence depend on the large-seale eonditions determining the motion, and not on the small irregularities whieh generate the disturbanees: thus in the ease of the atmosphere the strueture of the turbulent

fluctuations at any point is characteristic of the wind-speed and the scale of the surface irregularities, and is not directly dependent upon the position of obstacles such as trees and hills upstream of the point. It is important to realise that the interactions are inertial, and that therefore the velocity fluctuations are transferred from one point to another by the air itself, and not by pressure waves or any similar high-speed process. A gust of wind, therefore, moves with about the velocity of the air contained in it, and except in high winds (where, as explained below, flying can be dangerous) a bird flying with the wind always overtakes the front of the gust and not *vice versa*.

It is a little difficult to visualize the effect of the turbulence on a flying bird. A little reflection shows that no air-borne object can be aware directly of a *uniform* air-stream, but a bird, being light (and small compared with the scale of the turbulence), can detect *changes* in wind velocity, which it will perceive directly as accelerations. Since the intensity of the turbulent fluctuations is large (near the ground it is characteristically of the same order as the mean stream velocity, and in some circumstances can be even greater), the bird needs no abnormal faculty for detecting small accelerations in order to be able—should it need this knowledge—to determine accurately the pattern of velocity changes (i.e. the structure of the turbulence) in anything above a light wind. As described below, however, the observed pattern is modified by virtue of the fact that the bird is moving with a constant velocity (greater than the turbulent variations) relative to the *local* air-speed.

If the turbulence were isotropic—i.e. if the fluctuations were equally large in all directions—this information would be of no assistance to the bird. However, the turbulence in the atmosphere consists of “gusts” which have a characteristic structure, consisting, to a fixed observer, of a sharp increase of wind velocity in the direction of the mean stream, followed by a much more gradual decrease, while the cross-stream fluctuations are smaller. (This structure persists up to about 3,000 feet, though the intensity of the turbulence falls off with height.) A bird flying across the wind, therefore, will detect the largest and most abrupt increases of velocity from one direction, the upstream direction. The case of a bird flying in the mean wind direction is complicated by the bird’s motion relative to the air, for a bird flying downwind will (see above) overtake the “shock” front of the gust and hence experience the same sensation—a sharp retardation—as if it was flying upwind. The time-patterns of the accelerations in the two cases are very different in detail, however, and the bird could in theory determine the wind direction even without changing its flight direction. Orientation is further facilitated by the fact that the gusts are elongated in the mean-stream direction, and in fact the structure of the gusts is such that the birds could determine the wind direction and strength with reasonable accuracy by the “feel of the air” alone.

These simple facts of atmospheric turbulence are relevant to bird flight in three important ways:

(1) In high winds birds are often reluctant to fly at all, even if the wind direction is favourable, e.g. for migration. The frequency of sudden velocity changes of the order of the birds' air-speed renders flight in such conditions uncomfortable or even dangerous. In fact this probably leads to a minimum useful speed of bird flight, greater than the normal level of turbulent velocity fluctuations: the faculty of flight is presumably only useful to a bird if it can be used frequently, and a bird with a maximum flight-speed below this level could only fly with safety in light winds.

(2) In a similar way, in moderate winds, the asymmetrical distribution of the velocity variations, with the largest sudden changes in the downwind direction, makes flying safer upwind than downwind, there being less danger of aerodynamic instability due to sudden falls of air-speed below the stalling-speed. This fact presumably explains the often-repeated observation that migrating birds tend to turn into the wind on reaching a guiding-line, irrespective of their original preferred direction of flight.

(3) The rather unfortunate term "migrational drift" has been coined for a theory of bird behaviour, which postulates that in certain conditions—in particular when unable to maintain a preferred direction by visual means—migrating birds abandon "orientation" and turn down-wind, thereby achieving the maximum possible ground-speed. The criticism has been advanced that the birds can only determine the wind-direction visually, and hence that the behaviour hypothesized is impossible, but I hope to have shown here that the known properties of turbulence alone invalidate this argument.

I. C. T. NISBET

Cavendish Laboratory,
Cambridge.

GUILLEMOTS ON AILSA CRAIG

SIRS,—I shall be glad if you will grant me space to reply to the enquiries of Professor M. F. M. Meiklejohn (*antea*, p. 96) about the Northern Guillemot (*Uria aalge aalge*) on Ailsa Craig. I regret the delay in sending this reply; the prolonged and serious illness of a professional colleague left me so over-burdened with work that bird-watching has had to be laid aside almost entirely since the beginning of the year, and Professor Meiklejohn's letter was drawn to my attention only relatively recently.

It is a pity that Professor Meiklejohn jumps to such hasty conclusions. I rarely attempt subspecific identification in the field, nor do I collect skins; the Northern Guillemots on Ailsa Craig were identified by the examination of live specimens in the hand.

My attention was first drawn to the Northern Guillemot in

1945 when I found a dead bird at the foot of the Ailsa cliffs that obviously belonged to the northern race. Until that time I had no idea that northern birds might be found on Ailsa, and during the next two years I paid close attention to the colonies in an attempt to discover what proportion of northern birds was present. There are few colonies on Ailsa, however, where one can get close enough to the birds to make fine identification possible and I was unable to identify any northern birds to my satisfaction.

In 1948, however, there occurred the greatest oiling disaster in Ailsa's history (see *Scot Nat.*, vol. 63, p. 97; or Fisher and Lockley's *Seabirds*, p. 108), and on 23rd August vast numbers of oiled Guillemots came ashore overnight. During the next three days I examined over 1,100 oiled birds on the shore. Some of these were so badly oiled as to make subspecific identification impossible, but of the others I found 39 birds belonging to the northern race, and 17 birds which I could not definitely assign to either race. If Professor Meiklejohn doubts the existence of intermediate forms, as he apparently does, he could examine specimens in the Royal Scottish Museum marked by the late H. F. Witherby as "intermediate in character". I cleaned some of the birds, and for ten days kept a Razorbill (*Alca torda*), a Southern Guillemot (*U. a. albionis*) and two Northern Guillemots at my cottage on Ailsa. They became exceedingly tame and in a few days would take sardines from my hand without making any attempt to bite. I often compared the southern and a northern bird side by side, when the differences were most marked. One of the northern birds had a back nearly as dark as the Razorbill.

In 1950 there was another serious oiling and of 120 Guillemots examined I found one northern bird. In 1951 large numbers of Guillemots were again oiled but few came ashore where they could be examined, and apart from this there has been no oiling of any significance on Ailsa since 1950. In fact, this year (1955) I saw no oiled bird of any kind. In this respect, therefore, Professor Meiklejohn is correct when he says that "Dr. Gibson's hopes of completing his investigations seem to have been disappointed", and I fervently hope that they continue to remain disappointed. The results so far give 58 northern and "intermediate" birds in approx. 1,200, i.e. just under 5%.

Needless to say, I have never at any time expressed my inability to distinguish the Rock and Meadow Pipits (*Anthus spinoletta* and *pratensis*). What I said (*Scot. Nat.*, vol. 63, p. 79), when speaking of attempts to delimit the territory occupied by each species on Ailsa Craig, was that identification was "not easy". Any man who thinks that pipit identification on Ailsa Craig is easy, where much of the identification must be attempted at considerable distances and often in hazardous situations, is merely deluding himself. The casual reader must think it strange that Professor Meiklejohn quotes me so carefully in one instance, and then misquotes me so obviously a little later. J. A. GIBSON

NOMENCLATURE AND "NORTHERN" CHIFFCHAFFS

SIRS,—Vaurie (1954) accepts the validity of *Phylloscopus collybita fulvescens* (Severtzow) (1873—Turkestan) as a geographical race differing from *Ph. c. tristis* Blyth (1843—Calcutta) in being less grey and more greenish above, especially on the rump and upper tail-coverts. He states that birds from eastern Iran match a breeding series of *fulvescens* from Orenburg in the southern Urals; and that the Persian population "is cut off from the nearest breeding populations of *fulvescens* by the Caspian and the deserts of Transcaspia and Turkestan, but apparently an eastwards cline in the reduction of the lipochromes runs in northern Iran, as it does in Russia and Siberia, from *abietinus* through *fulvescens* to *tristis*, and has resulted in populations which in eastern Iran are not separable from *fulvescens*."

If *Ph. c. fulvescens* is accepted as a valid race, then a number of specimens in the British, Royal Scottish and St. Andrew's University Museums will have to be referred to this form. When compared with *tristis* from the Punjab and Bengal (presumably migrants from populations east of the Yenesei) they are seen to be slightly greener on the upper-parts, especially the rump and tail-coverts. These birds include some historic specimens: for example, the first for the Forth area (Isle of May, 16th October 1910) and the first for Kirkcudbrightshire (Little Ross, 3rd December 1916), are *fulvescens* and not *tristis* as previously acknowledged, and other county records may also be involved.

The propriety of regarding *fulvescens* as a constant form with a restricted geographical distribution was questioned by Ticehurst (1938, p. 56), whose material comprised over 500 *tristis* from all parts of its range. He concluded that *fulvescens* represents an intermediate population. As such, it is hardly entitled to the same standing in nomenclature as the "pure" terminal populations of *collybita* (of which *ibericus* is perhaps a synonym—Vaurie, *op. cit.*) in the south-west, *abietinus* in the north-west, and *tristis* east of the Urals.

Recently Holgersen (1955) has shown that the type-locality of *abietinus* cannot be Sweden, as is usually stated, but must be the county of Nord-Trondelag in Norway, whence Nilsson's specimens came. Voous (1955), after studying the Norwegian material of *Ph. collybita*, mostly collected during the autumn migration, concludes: "Probably *collybita* represents the south-west European and *abietinus* the south-east European glacial population. *Collybita* and *abietinus* together represent a rather uniform western (European) distributional unit, opposed to the considerably distinct eastern (Siberian) populations, with which they are connected through a zone of secondary intergradation".

This confirms my own view (1954), based on a study of the Fair Isle and Isle of May material and an application of the theory of

migrational drift to the 1952 movements, that these variable intergrades are drift-migrants from some part of north-east Europe or western Asia rather than "pure" Siberian *tristis*. Further, these two approaches to the problem suggest that, whatever may be the case in Iran, no simple cline in the reduction of the lipochromes exists in the northern part of the range. The name *fulvescens*, given to a migrant from this region, represents a type of individual variation within this extensive hybrid zone, and not a discrete geographical unit, and it would be best to follow Ticehurst in regarding this name as a synonym of *Ph. c. tristis*.

KENNETH WILLIAMSON

Fair Isle Bird Observatory.

REFERENCES

HOLGERSEN, HOLGER (1955): "On the type-locality of *Phylloscopus collybita abietinus* (Nilsson)". *Sterna*, no. 18: 1-4.

TICEHURST, C. B. (1938): *A Systematic Review of the Genus Phylloscopus*. London (British Museum Trustees).

VAURIE, CHARLES (1954): "Systematic Notes on Palaearctic Birds: No. 9, Sylviinae: the Genus *Phylloscopus*". *American Mus. Nov.*, no. 1685: 23.

VOOUS, K. H. (1955): "On *Phylloscopus collybita* from Norway." *Sterna*, no. 18: 4-7.

WILLIAMSON, KENNETH (1954): "'Northern Chiffchaffs' and their area of origin." *Brit. Birds*, xlvii: 49-57.

NUTHATCH ROOSTING TIMES

SIRS,—In her paper "Nuthatch roosting times in relation to light as measured with a photometer" (*antea*, pp. 71-74), Mrs. M. C. Radford has concluded that the time of roosting is not affected by light intensity.

This conclusion is based, however, upon a consideration of extreme cases. A statistical method exists for dealing with the whole set of data. As Mrs. Radford has given this in full, I have been able to carry out the analysis, which involves the determination of correlation coefficients. For those interested in the figures, I give the statistics at the end of this letter, but shall confine myself here to a general statement of the results.

The hypothesis which Mrs. Radford presumably wished to test was that the bird roosts later in relation to sunset on light than on dark evenings. If this were so, we would expect a positive correlation between the light value and the number of minutes after sunset that the bird went to roost. In fact, I find a significant negative correlation (coefficient 1 below). This means that, on the whole, low light values were associated with late roosting (in relation to sunset) and high light values with early roosting.

I believe there are two reasons for this superficially unexpected result.

Firstly, as Mrs. Radford pointed out, roosting occurred earlier

in relation to sunset in some months (especially February and March) and these are just the months with the highest light values. The cause of this (probably longer feeding time with longer days) may be considered independent of daily light fluctuations. To rule out the effect of a seasonal factor of this kind, I have constructed a graph of "average roosting time" by plotting all the roosting times on squared paper and drawing a smooth curve through them, with deviations above and below equated as far as possible. Of course, such a curve can only be drawn approximately, but "average roosting time" seems to be a legitimate concept and this curve is one way of arriving at it. The shape of the curve rather closely resembles that of the sunset curve illustrated by Mrs. Radford in her previous paper (*antea*, vol. xlvii, p. 167). It touches the sunset curve around 1st January but is flatter on either side at the rate of about 15 minutes per month.

Earliness or lateness of roosting may now be considered in relation to the average roosting time and calculated, for each day, by the deviation from the curve. I have done this for each of the 87 cases of complete data given by Mrs. Radford. The correlation coefficient now becomes effectively zero (coefficient 2 below). Furthermore, coefficients (3 below) calculated separately for each of the five months November to March do not differ significantly from zero. This means that, on the average, there was no relationship between hour of roosting and light intensity.

However, a second factor must now be considered. The light intensity was measured daily at the time of roosting and not at some standard time with respect to the sun. Thus the light values given are not comparable from day to day. Early roosting times will tend to be associated with higher light values simply because it is normally lighter earlier in the evening—and *vice versa*.

It is impossible to give a quantitative estimate of the effect this may have had in masking a positive correlation. However, it seems highly probable to me that some such positive correlation would have been found if, instead of light intensity at time of roosting, a daily measurement had been made of light value at, say, sunset, or, better still, over a fixed period before sunset (allowing for seasonal change in angle of approach of sun to horizon). If so, it would indicate after all that roosting time is affected by daily changes in light value.

The statistical results are as follows:

- (1) Product-moment correlation coefficient between deviation of roosting time from *sunset* and logarithm of photometer reading (the logarithm has been used both because it is indicated by Weber's Law, and to normalize the frequency distribution of this variable):

$r = -0.437$ ($n=87$); significantly less than zero (p less than .01).

- (2) Product-moment correlation coefficient between deviation from *average roosting time* and logarithm of photometer reading:

$$r = +0.033 \ (n=87).$$

- (3) Rank-order correlation coefficients between deviation of roosting times from average roosting time and photometer reading:

(a) November $r = +0.45 \ (n=18)$

(b) December $r = +0.170 \ (n=21)$

(c) January $r = -0.136 \ (n=14)$

(d) February $r = -0.399 \ (n=18)$

(e) March $r = +0.131 \ (n=16)$

None of the coefficients in (2) or (3) differs significantly from zero (p greater than .05 for all).

P. W. P. BROWNE

DEFENCE BEHAVIOUR OF CRESTED COOT

SIRS,—Mr. J. Lord's note (*antea*, p. 176) on the defence behaviour of a flock of Coot (*Fulica atra*) reminds me of an opportunistic stratagem simultaneously employed by a party of 28 Crested Coot (*F. cristata*) when a Sea Eagle (*Haliaeetus vocifer*) skimmed over the water they were using in the Rondevlei Bird Sanctuary, Cape Province, South Africa.

In the open water of the Sanctuary's lake the Coot, on the irregular appearance of the Sea Eagle, normally make a hurried dash for either the dense sedge-beds or the grassed banks, but on the occasion recalled the party was investigating an area of veld inundated by winter rains, through which ran the Sanctuary's 8-foot diamond-mesh fence. Flying low, the eagle appeared suddenly over a belt of acacia and, at a height of 10 feet, made for the fence on which it perched. The 28 dispersed birds urgently converged on the fence from all points of the compass and, head to tail, huddled closely against the wire and immediately under the predator! Even had the eagle decided to attack, its size would have prohibited it from getting at any of the birds bobbing on 24 inches of water. After a few minutes the eagle flew off, and the Coot swam away from their judiciously-chosen and unassailable spot.

ERNEST MIDDLEMISS



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Compiled by Miss N. D. GIFFARD

Entries are in a single list with references to:

(i) every *significant* mention of each species, not only in titles, but within the text of papers and notes, including all those appearing in such lists as the *Report on bird-ringing for 1954*; in the case of such groups as "Warbler", "Thrush", "Duck", etc., there are cross-references to those members of the family which do not bear the family name and so appear elsewhere, e.g. "Blackcap", "Fieldfare", "Wigeon", etc.;

(ii) scientific nomenclature listed under generic names only;

(iii) authors of all papers, notes, and letters; and photographers;

(iv) a few subject headings, e.g. "Breeding (nests, eggs, fledging)", "Display", "Distribution", "Field-characters", "Food", "Migration", "Obituary", "Parasites", "Voice";

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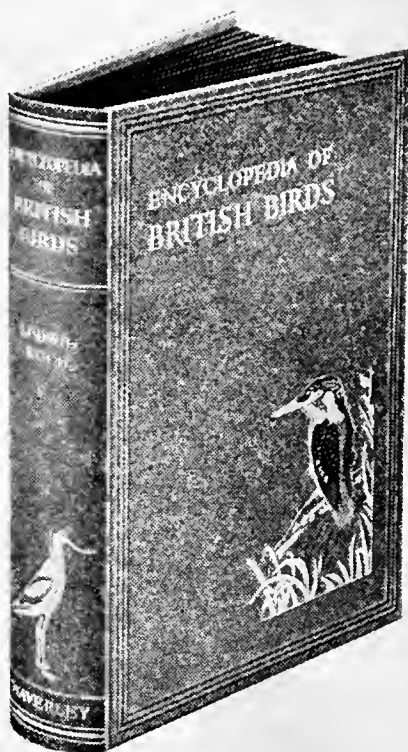
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